# PHOTOFACT* FOLDER SET

*TRADE MARK

# NO. 134

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# The PHOTOFACT Servicer

May 15, 1951 ★ *Published for all users of Howard W. Sams' Photofact Folders* ★ Vol. No. 14, Nos. 133 & 134

"There is nothing so dead as a neglected opportunity." - Anon.

## NEW PARTICIPANT

We are proud to announce the name of Thomas Electronics, Inc., 118 Ninth Street, Passaic, New Jersey, to the ever-growing list of participants in the Howard W. Sams Company activities. Thomas, with its widely known trademark T. E. I., offers a complete line of replacement picture tubes in all the popular sizes and styles. Data on their replacement tubes will appear soon as a regular part of Photofact Folders.

## NEW ITEMS AND TRADE NOTES

The Astatic Corporation Supplying New Cartridge -

The Astatic Corporation has made available a new cartridge designed expressly for replacement in Admiral equipment. Known as the type 402-M, the cartridge may be installed in tone arms by a snap-in action. The unit replaces Admiral Part No. A-1372, and is supplied with a 3 mil precious metal tip.

High Value Wire Wound Resistors -

Clarostat Manufacturing Company has just announced that they will supply resistance values of 8,000 - 8,500 - 9,000 and 10,000 ohms in their 5-watt wire wound line. These values are higher than those previously offered in this series. A 9,000 ohm value has been added to the 10-watt line.

Electro-Voice Publishes New Phono-Cartridge Replacement Chart -

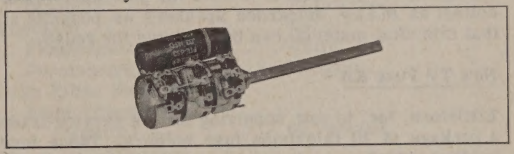
An unusual Phono-Cartridge Replacement Chart has been published by Electro-Voice, Inc. Not only does it provide a complete, up-to-date cross-reference listing of exact and duplicate replacements for cartridges of various manufacturers, but it also tells when to replace a phono-cartridge, what tests to make, and what type cartridge to use.

Size of the Chart is 11" x 16-1/2", and it can be hung up, or folded to 8-1/2" x 11" for counter or binder use.

A free copy of this Chart, No. 161, can be obtained by writing to Electro-Voice, Inc., Dept. PFS, Buchanan, Michigan.

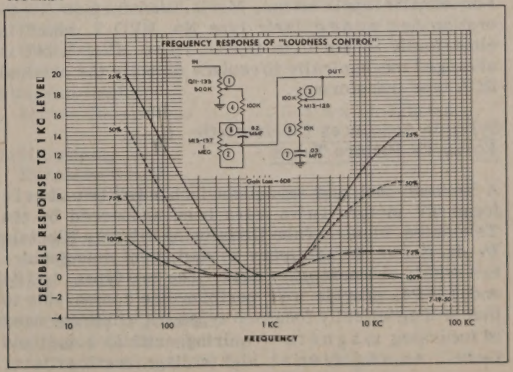
Erie Resistor Inaugurates New Cataloging System

The Erie Resistor Company recently announced that henceforth their distributor line of ceramic capacitors will be cataloged and packaged under a new numbering system which will enable the service technician and his parts distributor to order quickly and accurately the necessary units to fit his requirements.



Loudness Control -

International Resistance Company has started supplying an item through their distributors, which should be of interest to any audio fan. Known as the "loudness control", it is a compensated three-section variable control, which when substituted for the gain control of an amplifier, compensates for the variations in frequency response inherent in present-day audio level control circuits. The picture above shows the unit with its compensating capacitors and resistors, as well as a wiring diagram of the unit, a parts list and the attenuation curve. Parts to make up this item are based on the standard distributor items.



## PARTS LIST

| Schematic Number | Description |
|---|---|
| 1. | IRC Type "Q" Control - Q11-133 |
| 2. | IRC Multisection - M13-137 |
| 3. | IRC Multisection - M13-128 |
| 4. | IRC BTS 0.1 Meg. + 10% |
| 5. | IRC BTS 10K + 10% |
| 6. | 82 MMF. Capacitor |
| 7. | 0.03 MFD. capacitor |

## ASSEMBLY

Assemble to the "Q" control the two specified Multisections, in the order shown by the above Schematic using instructions included with each Multisection.

Assemble the additional parts and make all required connections as shown in the Schematic and solder.

Cut shaft to required length and assemble and wire into any high gain audio amplifier.

Salvaging of Critical Materials -

Jensen Manufacturing Company has launched an extensive drive to salvage Alnico speaker magnets from old speakers. The plan is to have the parts distributor collect as many discarded speakers as possible so that this vital material can be salvaged for reuse.

New TV Fuse Kit -

Littlefuse, Inc. is now supplying for the service trade a package of 10 television fuse holders. These fuse holders, which are already popular with the technician, clip a new fuse directly onto the old fuse without the necessity of soldering. The addition of the kit of holders to the assortment of fuses already available makes for easy replacement in TV service.

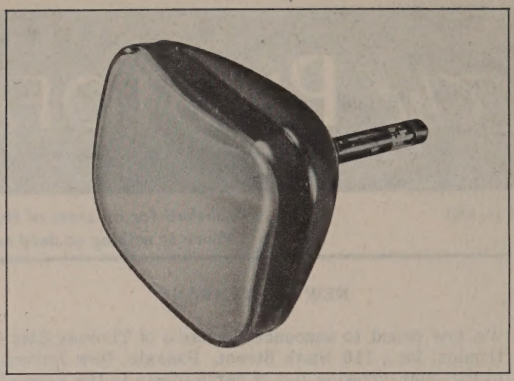
New Horizontal Output Transformers -

Standard Transformer Corporation is introducing their part No. A-8130, which is a replacement for popular type 77-J1 flyback unit. This transformer type has become increasingly popular because of its adaptability to conversion jobs.

For similar applications, Merit Transformer Corporation has added their type No. HVO-7, which is electrically identical to their type HVO-6, but is arranged mechanically to replace directly the original RCA type transformer.

Sylvania Announces Electrostatic Focus TV Picture Tubes -

A fourteen-inch and seventeen-inch electrostatic focus TV picture tube have been announced by the Television Picture Tube Division of Sylvania Electric Products Inc., for delivery to equipment manufacturers within the next sixty days. The two types, 14GP4 and 17FP4, provide set performance comparable to that of magnetically focussed types but eliminate need of focussing magnets requiring critical cobalt and nickel. An additional high voltage rectifier tube,



potentiometer insulated for focus voltage and other circuit components are required.

Mechanical specifications of the 14GP4 include: overall length approximately 16-3/4"; diagonal bulb dimension 13-11/16", height 9-23/32", width 12-17/32". Its useful screen area is 8-3/4" x 11-5/8". The 17FP4 has an overall length of approximately 19-1/4"; diagonal bulb dimension 16-5/8", height 12-1/4", width 15-3/8". Its useful screen area is 10-3/4" x 14-1/4".

Both tubes are supplied with 6.3 volt, 0.6 ampere heaters; require 12,000 volts DC on collector; approximately 2600 volts for focus; and an ion trap magnet with field strength of 35 to 40 gausses. Gray filter face plates provide approximately 66% light transmission. Magnetic deflection of 65 degrees horizontal and 70 degrees diagonal may be obtained. The collector in both type tubes is provided by internal connection between number 3 and number 5 grids.

Sylvania will shortly announce a 20" version also of the electrostatically focused tube, which will be known as the 20GP4.

Since more interest is constantly being shown in the type tubes described above, we are including below a chart showing the electrical and mechanical data, as well as the ratings, for these tubes.

### TYPE 17FP4
### RATINGS AND CHARACTERISTICS

#### ELECTRICAL DATA

| | |
|---|---|
| Heater Voltage | 6.3 Volts |
| Heater Current | 0.6 + 10% Ampere |
| Focusing Method | Electrostatic |
| Deflecting Method | Magnetic |
| Deflecting Angle | |
| Horizontal | 65 Degrees |
| Diagonal | 70 Degrees |
| Phosphor | No. 4 |
| Flourescence | White |
| Persistence | Medium |
| Gray Filter Face Plate Light Transmission (Approx.) | 66 Percent |
| Direct Interelectrode Capacitances, Approx. | |
| Cathode to all Other Electrodes | 5 MMF. |
| Grid No. 1 to all Other Electrodes | 6 MMF. |
| External Conductive Coating Capacitance to Anode | 750 Max. MMF. 500 Min. MMF. |

## MECHANICAL DATA

Overall length . . . . . 19-1/4 ± 3/8 inches

Greatest Bulb Dimensions
- Diagonal . . . . . 16-5/8 ± 1/4 inches
- Height . . . . . 12-9/32 inches
- Width . . . . . 15-25/64 inches

Minimum Useful
- Screen Dimensions . . . . . 10-3/4 x 14-1/4 inches

Bulb Contact,
- Recessed Small
  - Cavity Cap . . . . . J1-21

Base, Small Shell
- Duodecal 6 Pin . . . . . B6-63

Basing . . . . . 12-C

Bulb Contact Alignment
- Aligns with Vacant
  - Pin Position No. 6 . . . . ± 10 Degrees

## MAXIMUM RATINGS
(Design Center Values)

Collector Voltage[1] . . . . . 18,000 Max. Volts DC
Grid No. 2 Voltage . . . . . 410 Max. Volts DC
Grid No. 1 Voltage
- Negative-bias Value . . . . . 125 Max. Volts DC
- Positive-bias Value . . . . . 0 Max. Volts DC
- Positive-peak Value . . . . . 2 Max. Volts
- Focusing Electrode
  - (Grid No. 4) Voltage[2] . . 4500 Max. Volts DC

Peak Heater-Cathode Voltage
- Heater Negative with Respect to
  - Cathode During Warm-up
    - Period not to Exceed
      - 15 Seconds . . . . . 410 Max. Volts DC
    - After Equipment
      - Warm-up Period . . . . . 150 Max. Volts DC
- Heater Positive
  - with Respect to
    - Cathode . . . . . 150 Max. Volts DC

## JETEC COMPARATIVE CONDITIONS

Collector Voltage . . . . . 12,000 Volts DC
Grid No. 2 Voltage . . . . . 300 Volts DC
Grid No. 1 Voltage[3] . . . . . -33 to -77 Volts DC
Ion Trap Magnet Field
- Strength, Approx. . . . . 35 Gausses

Focusing Electrode (Grid No. 4)
- Voltage, Approx. [4] . . . . . 2,700 Volts DC

Focus Test Conditions
- Anode Voltage . . . . . 16,000 Volts DC
- Grid No. 2 Voltage . . . . . 300 Volts DC
- Focus Voltage (Note 4) . . . 3,600±500 Volts DC
- Ion Trap Field Strength,
  - Approx. . . . . 40 Gausses
- Grid No. 1 Circuit
  - Resistance . . . . . 1.5 Max. Megohms

## NOTES

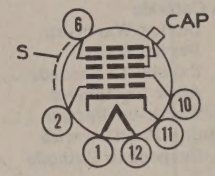
1. Collector, Grid 3 and Grid 5, which are connected together internally, are referred to herein as Collector.

2. Allowable leakage current for focusing electrode ranges from -15 microamperes to +25 microamperes at maximum voltage rating.

3. Visual extinction of undeflected focused spot.

4. Voltage for best focus at center of screen, using a typical television test pattern, with combined Grid No. 1 bias voltage and video signal voltage, adjusted to produce 100 microamperes average collector current.

BASING
- Pin 1 Heater
- Pin 2 Grid No. 1
- Pin 6 Focus Electrode
- Pin 10 Grid No. 2
- Pin 11 Cathode
- Pin 12 Heater
- Cap Anode




## TYPE 14GP4
## RATINGS AND CHARACTERISTICS

## ELECTRICAL DATA

Heater Voltage . . . . . 6.3 Volts
Heater Current . . . . . 0.6±10% Ampere
Focusing Method . . . . . Electrostatic
Deflecting Method . . . . . Magnetic
Deflecting Angle
- Horizontal . . . . . 65 Degrees
- Diagonal . . . . . 70 Degrees

Phosphor . . . . . No. 4
- Flourescence . . . . . White
- Persistence . . . . . Medium

Grau Filter Face Plate
- Light Transmission
  - (Approx.) . . . . . 66 Percent

Direct Interelectrode
- Capacitances, Approx.
  - Cathode to all
    - Other Electrodes . . . . . 5MMF.
  - Grid No. 1 to all
    - Other Electrodes . . . . . 6 MMF.

External Conductive Coating
- Capacitance to Anode . . . . 2000 Max. MMF.
  - 750 Min. MMF.

## MECHANICAL DATA

Overall Length . . . . . 16-3/4±3/8 inches

Greatest Bulb Dimensions
- Diagonal . . . . . 13-11/16±1/8 inches
- Height . . . . . 9-23/32±1/8 inches
- Width . . . . . 12-17/32±1/8 inches

Minimum Useful
- Screen Dimensions . . . . . 8-5/8 x 11-1/2 ins.

Bulb Contact,
- Recessed Small
  - Cavity Cap . . . . . J1-21

Base, Small Shell Duodecal
- 5-Pin . . . . . B6-63

Basing . . . . . 12C

Bulb Contact Alignment
- Aligns with Vacant
  - Pin Position No. 6 . . . . ± 10 Degrees

MAXIMUM RATINGS
(Design Center Values)

Collector Voltage[1] . . . . . 14,000 Max. Volts DC
Grid No. 2 Voltage . . . . . 410 Max. Volts DC
Grid No. 1 Voltage
Negative-bias Value . . . . . 125 Max. Volts DC
Positive-bias Value . . . . . 0 Max. Volts DC
Positive-peak Value . . . . . 2 Max. Volts
Focusing Electrode Voltage. 4000 Max. Volts DC
Peak-Heater-Cathode Voltage[3]
Heater Negative with Respect to Cathode
During Warm-up Period not to Exceed 15 Seconds . . . . 410 Max. Volts DC
After Equipment Warm-up Period . . . . . 150 Max. Volts DC
Heater Positive with Respect to Cathode . . . 150 Max. Volts DC

JETEC COMPARATIVE CONDITIONS

Collector Voltage . . . . . 12,000 Volts DC
Grid No. 2 Voltage . . . . . 300 Volts DC
Grid No. 1 Voltage[3] . . . . . -33 to -77 Volts DC
Ion Trap Magnet
Field Strength, Approx. . . . . 35 Gausses
Focusing Electrode
Voltage, Approx.[4] . . . . . 2600 Volts DC
Focus Test Conditions
Anode Voltage . . . . . 14,000 Volts DC
Grid No. 2 Voltage . . . . . 300 Volts DC
Focus Voltage[4] . . . . . 3000±450 Volts DC

MAXIMUM CIRCUIT VALUES

Grid No. 1 Circuit Resistance. 1.5 Max. Megohms

NOTES

1. Collector, Grid 3 and Grid 5, which are connected together internally, are referred to herein as Collector.

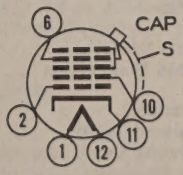
2. Allowable leakage current for focusing electrode ranges from -15 microamperes to +25 microamperes at maximum voltage rating.

3. Visual extinction of undeflected focused spot.

4. Voltage for best focus at center of screen, using a typical television test pattern, with combined Grid No. 1 bias voltage and video signal voltage, adjusted to produce 100 microamperes average collector current.

BASING

Pin 1 Heater
Pin 2 Grid No. 1
Pin 10 Grid No. 2
Pin 11 Cathode
Pin 12 Heater
Cap Anode
Pin 6 Focus Electrode




RTMA Announces Trend Toward Large Picture Tubes -

An interesting trade item was the recent announcement that 96% of all television picture tubes sold to set manufacturers in February were 16" or larger. This announcement, made by RTMA, indicates the popular trend toward the larger size tubes. In the face of this announcement, there are plans on the part of at least one manufacturer to manufacture 8-1/2" sets again. There is also an indication that other manufacturers are thinking seriously of concentrating on the manufacture of 12-1/2" and 14" receivers. The reasons given for the serious thinking toward the smaller sizes is strictly one of economy, since it is felt that these receivers are popular from a price standpoint.

Columbia Broadcasting System Purchases Hytron -

A news item being discussed at some length by the industry reveals the tentative purchase of Hytron Radio and Electronics Corporation and its set manufacturing subsidiary, Air King Products Co., Inc., by the Columbia Broadcasting System. The proposed purchase has yet to be approved by the stockholders of both companies. However, the recent color hearings and discussions brought out the fact that CBS had no manufacturing facilities, and this is one of the reasons given for the proposed transaction. Hytron is a manufacturer of television tubes and Air King Products is a well-known name in the receiving set field. It will be interesting to follow the developments and the entry of CBS into the manufacturing field.

UHF Activities -

As could be expected, the announcement of the FCC tentative proposal for the allocation of UHF television channels touched off publicity from most manufacturers regarding their UHF plans. Details on the proposed allocations were covered in the last Servicer, Sets 131 and 132.

Most companies have been maintaining research projects based on the development of equipment, particularly tuners and transmitters, for use in these new bands. It is generally felt that most of the tuners will be of a converter type, which will allow attachment to present day television receivers. Nearly every tuner manufacturer and set manufacturer has tested his tuner or converter at the Bridgeport, Connecticut location of the experimental RCA UHF station.

Most reports indicate that there will be several answers to the problem and that the conversion to the higher channels will not present too many problems as far as equipment is concerned.

Such things as oscillator radiation of converted and non-converted sets, choice of conversion frequency, and interference problems will have to be studied carefully before final decisions can be made. Many of the decisions will have to depend upon the action of the FCC in preparing its final station allocation plan. However, the industry is assured of having workable equipment, priced within the range of the consumer, when the need for UHF equipment becomes necessary.

Transmitter manufacturers who, at this date, have announced plans for the production of UHF equipment are General Electric, RCA and DuMont. One of the basic problems involved seems to be the choice of power, and again, the final decision will be based on FCC findings. As soon as specific information is available on various converters to be offered to the trade, data on them will be included in Photofact publications so that the service technician can be prepared for their use and service.

PRODUCTION CHANGES
BULLETIN 20

## SUPPLEMENTAL DATA TO PHOTOFACT FOLDER SET 3 SET #120

ARVIN MODELS 2120, 2121, 2123, 2124, 2126 (Ch. TE-289-3)

Arvin Models 2120, 2121, 2123, 2124 and 2126 (Ch. TE-289-3) are identical to Arvin Model 2120CM (Ch. TE-289-2) except for the following.

A color converter socket was added to the chassis.

A 100Ω resistor added from the junction of C97, T2 and R96 and connected to Pin 3 of the color socket.

The fuse M2 was disconnected from the junction of C97, T6 and R96 and connected to Pin 2 of the color socket.

A .1MFD capacitor added from the junction of C97, T6 and R6 to ground.

Pin 7 of V7 connected to Pin 5 of the color socket.

Pin 6 of V10 connected to Pin 7 of the color socket.

R70 changed to 10KΩ.

A single pole double throw local distance switch was added. One contact of the switch is grounded and the other connected in series with a 3300Ω resistor to the junction of R33, C3, etc.

A 1000MMF capacitor added across the switch contacts.

The AGC line to the tuner was disconnected from the junction of R22, C29 and R19 and connected to the arm of the local distance switch. A 1000MMF capacitor added from the tuner AGC line to ground.

R95 changed to 750Ω.

C80 changed to .0047 MFD.

A 470KΩ resistor added in parallel with A3, the horizontal lock.

A 47KΩ resistor added from Pin 1 of V12 to ground.

Pin 3 of V10 was disconnected from ground.

A 3300Ω resistor bypassed by a 5MFD capacitor was added from Pin 3 of V10 to ground.

L23 changed to 90 microhenries and wound on a 10KΩ resistor.

A 1000Ω resistor was added in series between the contrast control and the junction of M4, C54 and R41.

R41 changed to 220KΩ.

A 4.5MC trap coil shunted by a 120MMF capacitor was added between the junction of C58 and R43 and the junction of L27 and L26.

## SUPPLEMENTAL DATA TO PHOTOFACT FOLDER 10 SET #110

PHILCO MODELS 51-T1604 (Code 121, 122), 51-T1606 (Code 121, 122), 51-T1634 (Code 121, 122).

Philco Models 51-T1604 Code 121, 51-T1606 Code 121, 51-T1634 Code 121, 51-T1604 Code 122, 51-T1606 Code 122 and 51-T1634 Code 122 are identical to Philco Model 50-T1600 Code 122 with the following exceptions.

V14 and V16 changed to type 7N7 tubes.

R88 changed to 6800Ω.

R85 changed to 15KΩ, 2 watts.

R89 changed to 10KΩ.

C81 disconnected from the junction of R85 and R86 and connected to the plate of the sync. phase inverter, V14.

R87 removed.

The tuner in Models 51-T1604, 51-T1606, 51-T1634, all Code 121, changed to a 12-channel incremental tuner part number 76-5747. This tuner is the same as the one used in Model 51-T1443PM in Folder 11 Set #123.



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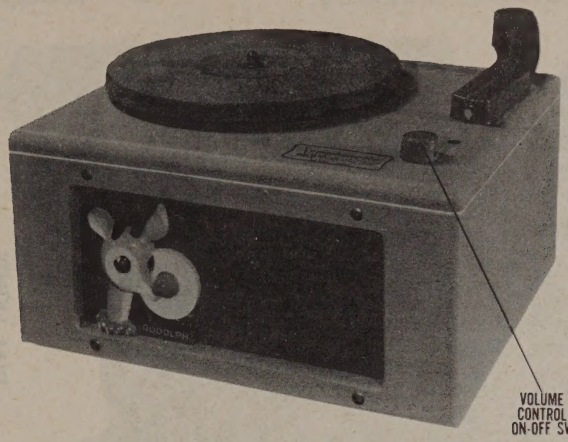
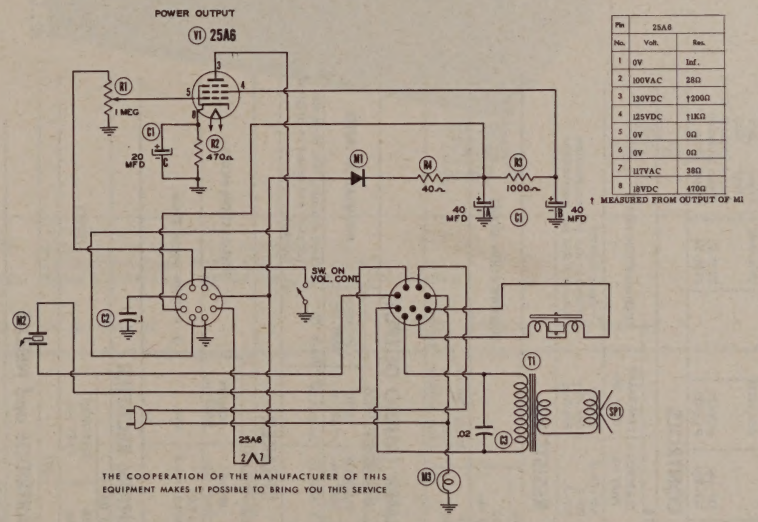



AIRLINE MODEL 15GHM-937A

| | |
|---|---|
| TRADE NAME | Airline, Models 15GHM-936A, 15GHM-937A |
| SUPPLIER | Montgomery-Ward & Co., 619Chicago Ave., Chicago, Illinois |
| TYPE SET | AC Operated Phono-Player With 1 Tube Amplifier |
| TUBES (ONE) | Type 25A6 Power Output |
| POWER SUPPLY | 105-125 Volts AC |
| RATING | .38 Amp. @ 117 Volts AC |




| Pin No. | 25A6 Volt. | Res. |
|---|---|---|
| 1 | 0V | Inf. |
| 2 | 100VAC | 28Ω |
| 3 | 130VDC | †200Ω |
| 4 | 125VDC | 11KΩ |
| 5 | 0V | 0Ω |
| 6 | 0V | 0Ω |
| 7 | 117VAC | 38Ω |
| 8 | 18VDC | 470Ω |

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ±15% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

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AIRLINE MODELS
15GHM-936A, 15GHM-937A

# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA: AIRLINE PART No. | REPLACEMENT DATA: STANDARD REPLACEMENT | RMA BASE TYPE | INSTALLATION NOTES |
|---|---|---|---|---|---|
| V1 | Power Output | 25A6 | 25A6 | 7S | |

## CAPACITORS

**Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING: CAP. | RATING: VOLT | REPLACEMENT DATA: AIRLINE PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C1A | 40 | 150 | CR101 | PRS150/ - | | EDL44215 | | TVA-3451 | Filter Red |
| B | 40 | 150 | | 40-40-40 | | | | | Filter Blue |
| C | 20 | 150 | | | | | | | Output Cathode Green |
| C2 | .1 | 100 | CR102 | P288-1 | DF-104 | PTE4P1 | | 2TM-P1 | Phono Isolation |
| C3 | .02 | 100 | CR103 | P488-02 | DF-203 | PTE4S2 | | 2TM-S2 | Output Plate * |

* Some Models use .01MFD in this application

## CONTROLS

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: AIRLINE PART No. | IRC PART No. | CLAROSTAT PART No. | CENTRALAB PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| R1A | 1Meg | ½ | CC105 | Q13-137 | AM-63-Z | B-70-S | Volume Control |
| B | Shaft | * | Not Req | Not Req | RS-2 | Not Req | Attach to R1A per instructions |
| C | Switch | | Not Req | 76-1 | SW-A | Not Req | Attach to R1A per instructions |

## RESISTORS

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: AIRLINE PART No. | IRC PART No. | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| R2 | 470Ω | ½ | | BTS-470 | Output Cathode |
| R3 | 1000Ω | ½ | | BTS-1000 | Filter |
| R4 | 40Ω | 1 | | | Surge Limiter - See Note |

Note Some models use 22Ω Resistor in this application

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING: IMPEDANCE PRI. | RATING: IMPEDANCE SEC. | RATING: DC RES. PRI. | RATING: DC RES. SEC. | REPLACEMENT DATA: AIRLINE PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| T1 | 1.8KΩ | 3Ω | 160Ω | .4Ω | | A-3332 ② | A-3025 ② | R0-2 ② | ② Bend mounting tabs down file out slots and mount on original bracket |

## SPEAKER

| ITEM No. | RATINGS | | REPLACEMENT DATA: AIRLINE PART No. | JENSEN PART No. | QUAM PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|
| SP1 | FIELD | V. C. IMP. | C M111① | ST105 | 5A1 | ① Includes Output Trans. |
| | PM | 3Ω | | Model P5-X | | |
| SP2 | CONE DIA. | V. C. DIA. | | | | |
| | 4 13/16" | 9/16" | | | | |

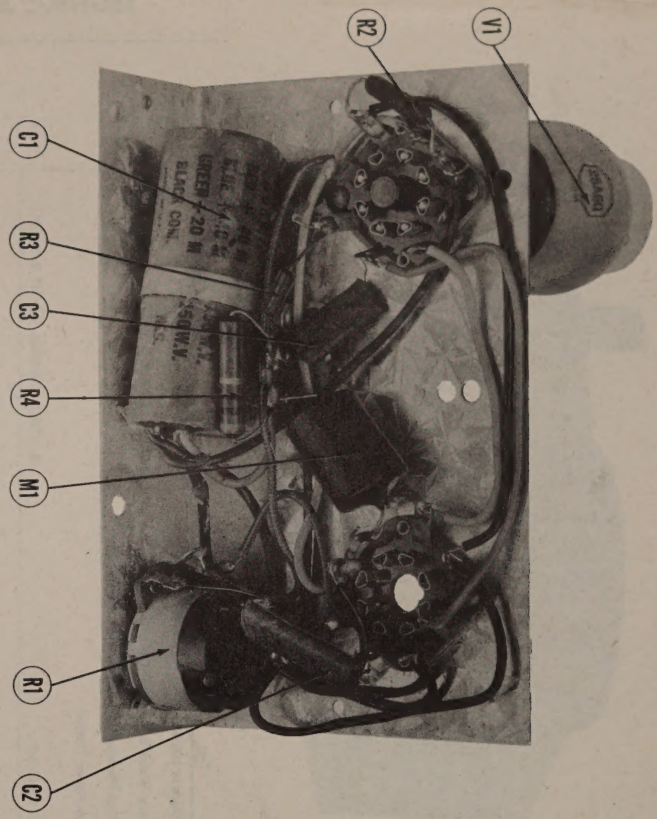
## SELENIUM RECTIFIER

| ITEM No. | RATING: CURRENT | REPLACEMENT DATA: AIRLINE PART No. | SYLVANIA PART No. | SELETRON PART No. | NOTES |
|---|---|---|---|---|---|
| M1 | .035A | CM112 | NB-5 | 8J1 | |

## PHONO CARTRIDGE and NEEDLE

| ITEM No. | REPLACEMENT DATA: AIRLINE PART No. | ASTATIC PART No. CARTRIDGE | ASTATIC PART No. NEEDLE | SHURE PART No. CARTRIDGE | SHURE PART No. | ELECTRO-VOICE PART No. CARTRIDGE | ELECTRO-VOICE PART No. NEEDLE | REMARKS |
|---|---|---|---|---|---|---|---|---|
| M2 | CM110 | L-29 | | W42H | 92H † | H-60 | | † Complete arm assembly |

# CHASSIS VIEW



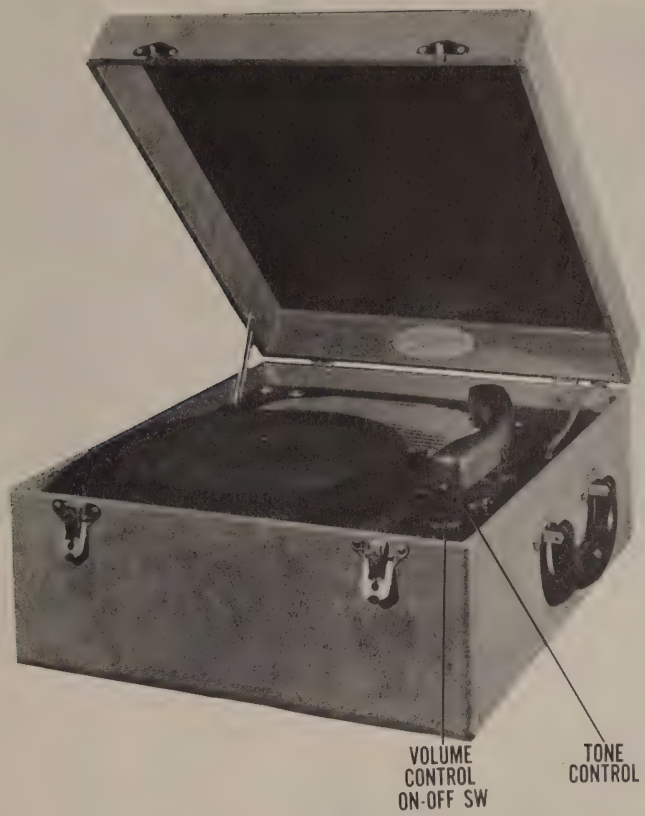

## DIAL LIGHTS

| ITEM No. | BASE TYPE | VOLTS | AMPS. | BEAD COLOR | REPLACEMENT DATA: AIRLINE PART No. | | NOTES |
|---|---|---|---|---|---|---|---|
| M3 | Bayonet | 110V | | | CM117 | | 110V 7W |

## MISCELLANEOUS

| ITEM No. | PART NAME | AIRLINE PART No. | NOTES |
|---|---|---|---|
| | Cabinet | CM114 | |
| | Knob | CM115 | |

ARTHUR ANSLEY
MODEL LP-7




ARTHUR ANSLEY
MODEL LP-7

| | |
|---|---|
| TRADE NAME | Arthur Ansley, Model LP-7 |
| MANUFACTURER | Arthur Ansley Mfg., Co., Doylestown, Pa. |
| TYPE SET | AC Operated Phono Player with 3 Tube Amplifier |
| TUBES (THREE) | Types 6C4 AF Amp., 6V6GT Power Output, 6X4 Rectifier |
| POWER SUPPLY | 110-120 Volts AC |
| RATING | .34 Amp. @ 117 Volts AC |

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# PARTS LIST AND DESCRIPTIONS

ARTHUR ANSLEY
MODEL LP-7

## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA | | RMA BASE TYPE | INSTALLATION NOTES |
|---|---|---|---|---|---|
| | | Arthur Ansley PART No. | STANDARD REPLACEMENT | | |
| V1 | AF Amplifier | 6C4 | 6C4 | 6BG | |
| V2 | Power Output | 6V6GT | 6V6GT | 7AC | |
| V3 | Rectifier | 6X4 | 6X4 | 5BS | |

## CAPACITORS

**Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT | Arthur Ansley PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | |
| C1A | 20 | 450 | | AF44J | | UP2245 | | TVL-2755 | ▲ Filter |
| B | 20 | 450 | | | | | | | ■ Filter |
| C2 | 25 | 25 | | PR825/25 | | BR252A | | TVA-1205 | Output Cathode |
| C3 | .01 | 400 | | P488-01 | D6-103 | PTE4S1 | 821-01 | 4TM-S1 | Audio Coupling |
| C4 | .02 | 400 | | P488-02 | DF-203 | PTE4S2 | | 4TM-S2 | Tone Comp. |
| C5 | .01 | 400 | | P488-01 | D6-103 | PTE4S1 | 821-01 | 4TM-S1 | Audio Coupling |
| C6 | .006 | 600 | | P688-006 | D6-562 | PTE6D6 | 821-01 | 6TM-D6 | Line Filter |

## CONTROLS

| ITEM No. | RATING | | REPLACEMENT DATA | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| | RESISTANCE | WATTS | Arthur Ansley PART No. | IRC PART No. | CLAROSTAT PART No. | CENTRALAB PART No. | |
| R1A | 500KΩ | ½ | | Q13-133 | AM-60-Z | B-60-S | Volume Control |
| B | Shaft | | | Not Req | RS-2 | Not Req | Attach to R1A per instructions |
| C | Switch | | | 76-1 | SW-A | Not Req | Attach to R1A per instructions |
| R2A | 100KΩ | ½ | | Q11-128 | AM-49-S | B-40 | Tone Control |
| B | Shaft | | | Not Req | RS-2 | Not Req | Attach to R2A per instructions |

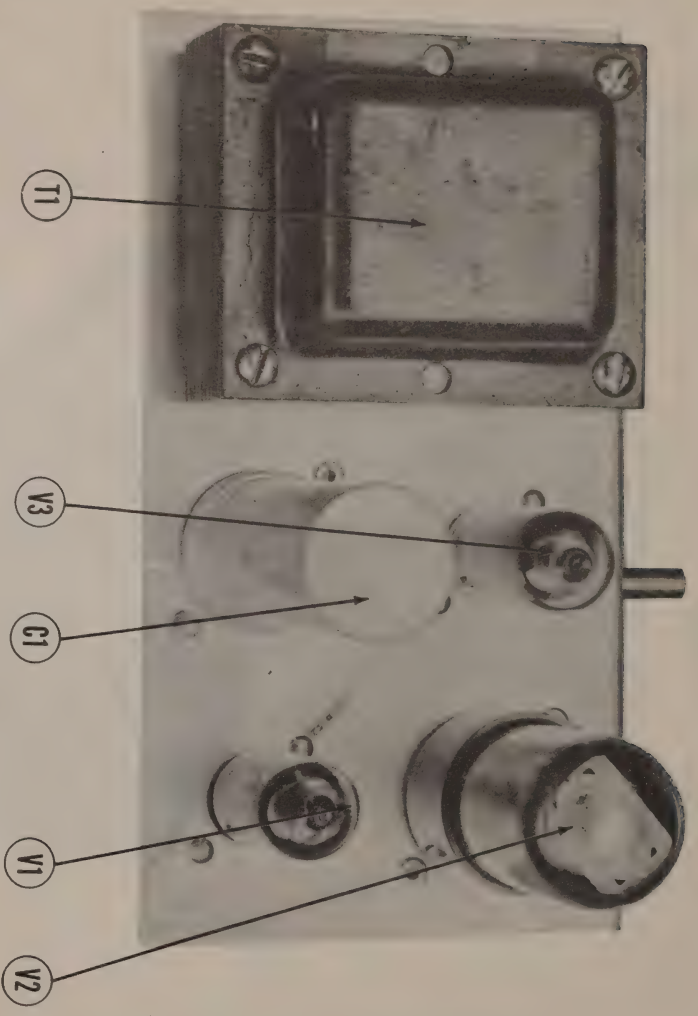
## RESISTORS

| ITEM No. | RATING | | REPLACEMENT DATA | | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| | RESISTANCE | WATTS | Arthur Ansley PART No. | IRC PART No. | |
| R3 | 240KΩ | ½ | | BTS-220K | Volume Control Shunt |
| R4 | 10Meg | ½ | | BTS-10Meg | AF Amp. Grid |
| R5 | 510K | ½ | | BTS-470K | AF Amp. Plate |
| R6 | 240KΩ | ½ | | BTS-220K | Output Grid |
| R7 | 360Ω | 4 | | | Output Cathode - Wire Wound |
| R8 | 650Ω | 10 | | | Filter - Wire Wound |

## TRANSFORMER (POWER)

| ITEM No. | RATING | | | | REPLACEMENT DATA | | | |
|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. 1 | SEC. 2 | SEC. 3 | Arthur Ansley PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. |
| T1 | 117VAC @ .34A | 600VCT .046ADC | 6.3VAC @ 1.2A | | | P6119 | | PV-70A |

## CHASSIS—TOP VIEW



# PARTS LIST AND DESCRIPTIONS (Continued)

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING | | | | REPLACEMENT DATA | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | IMPEDANCE | | DC RES. | | Arthur Ansley | STANCOR | MERIT | CHICAGO | |
| | PRI. | SEC. | PRI. | SEC. | PART No. | PART No. | PART No. | PART No. | |
| T2 | 5.2KΩ | 3.1Ω | 290Ω | .43 | | A-3877 ① | A-3019 | R0-9 ① | ① Drill one new mounting hole |

## SPEAKER

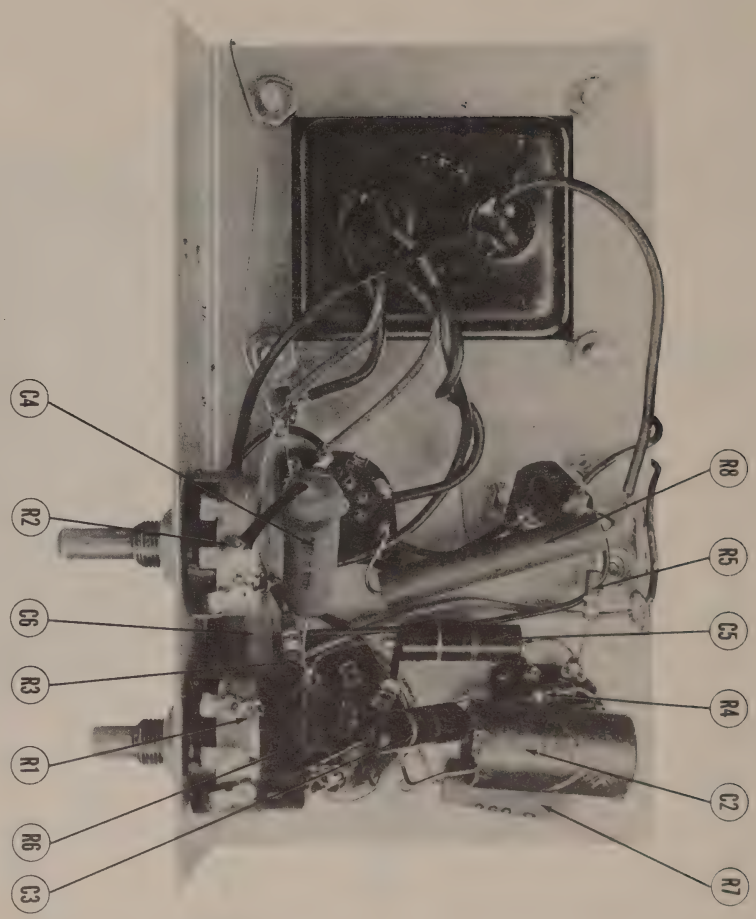
| ITEM No. | RATINGS | | REPLACEMENT DATA | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|
| | | | Arthur Ansley PART No. | JENSEN PART No. | QUAM PART No. | |
| | FIELD | V. C. IMP. | | ST810 | | |
| SP1 | PM | 3.1Ω | | Model P69-U | 69A2 | |
| | CONE DIA. | V. C. DIA. | | | | |
| SP2 | 6"X9" | 9/16" | | | | |

## PHONO CARTRIDGE and NEEDLE

| ITEM No. | REPLACEMENT DATA | | | | | | | | REMARKS |
|---|---|---|---|---|---|---|---|---|---|
| | Arthur Ansley PART No. | ASTATIC PART No. | | SHURE PART No. | | ELECTRO-VOICE PART No. | | |
| | | CARTRIDGE | NEEDLE | CARTRIDGE | NEEDLE | CARTRIDGE | NEEDLE | |
| M1 | | LQD-1J | "Q" Q-33 | | | 96 | 0-3 or S-3 and S-1 or 0-1 | |
| | | 7-D † | | 90ID † | | 25H60† | | † Complete arm assembly |

ASTATIC AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

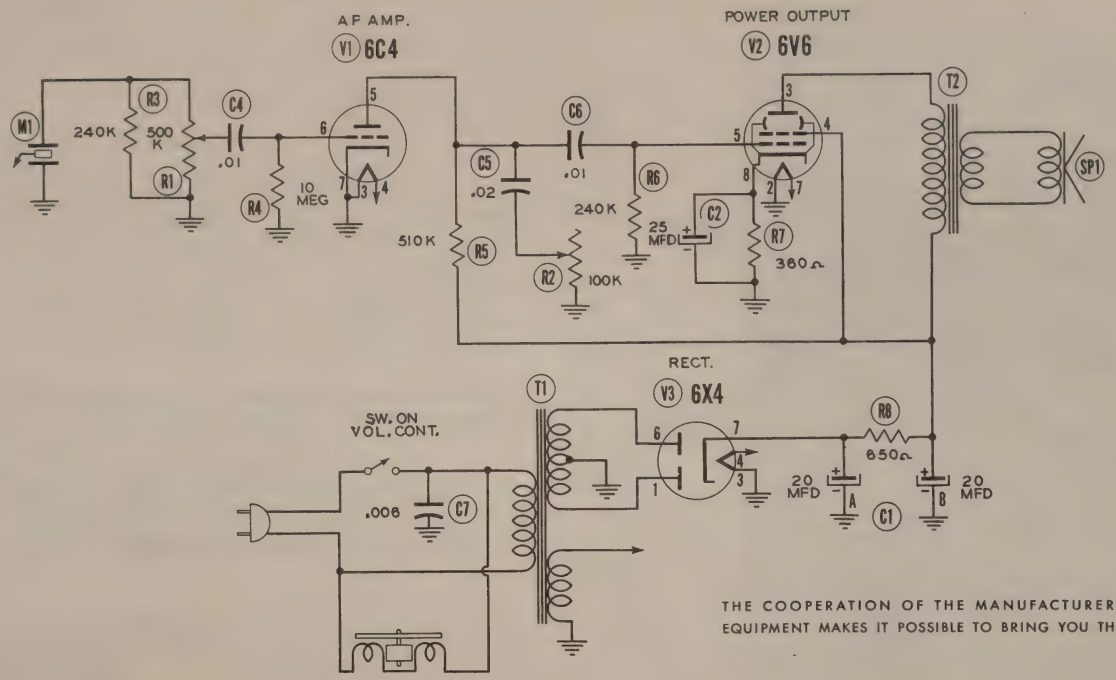
## CHASSIS—BOTTOM VIEW






ARTHUR ANSLEY MODEL LP-1

ARTHUR ANSLEY MODEL LP-1




THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

VOLTAGE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 |
|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6C4 | 22VDC | 0V | 0V | 6.3VAC | 22VDC | -.5VDC | 0V | |
| V 2 | 6V6GT | 0V | 0V | 295VDC | 305VDC | 0V | 0V | 6.3VAC | 18VDC |
| V 3 | 6X4 | 305VAC | 0V | 0V | 6.3VAC | 0V | 305VAC | 330VDC | |

RESISTANCE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 |
|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6C4 | †510Ω | Inf. | 0Ω | .3Ω | †510KΩ | 10Meg | 0Ω | |
| V 2 | 6V6 GT | Inf. | 0Ω | †940Ω | †650Ω | 240K | Inf. | .3Ω | 360Ω |
| V 3 | 6X4 | 370Ω | Inf. | 0Ω | .3Ω | Inf. | 370Ω | 50K | |

† MEASURED FROM PIN 7 V3

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of + 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

PHOTOFACT* Folder

# AUTOMATIC MODELS TV-5020, TV-5116R, TV-5160

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The contents for this envelope will be found among the last folders in this complete set of folders . . . *unless* it has been purchased as part of a *complete* volume of PHOTOFACTS assembled in a DeLuxe Binder.

Merely insert the corresponding folder on this model in this envelope to retain proper filing and indexing order.

MODEL TV-5116R

AUTOMATIC MODELS TV-5020, TV-5116R, TV-5160

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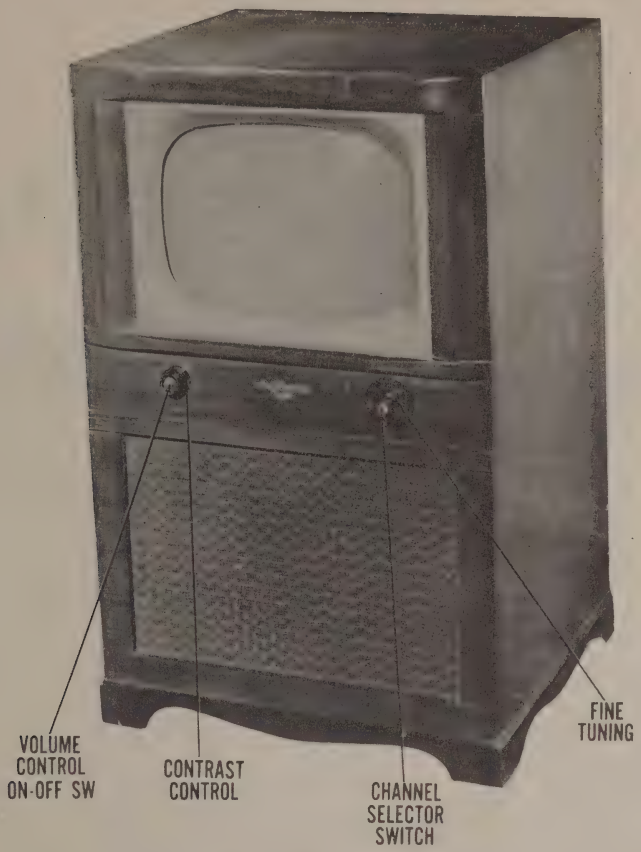


AUTOMATIC MODELS TV-5020, TV-5116R, TV-5160

AUTOMATIC MODEL TV-5116R

| | |
|---|---|
| TRADE NAME | Automatic, Models TV-5020, TV-5116R, TV-5160 |
| MANUFACTURER | Automatic Radio Mfg. Co., Inc., 122 Brookline Ave., Boston, Mass. |
| TYPE SET | Television Receiver |
| TUBES | Twenty One |
| POWER SUPPLY | 110-120 Volts AC - 60 Cycle — RATING 1.7 Amp. @ 117 Volts AC |
| TUNING RANGE- | Channels 2 thru 13 |

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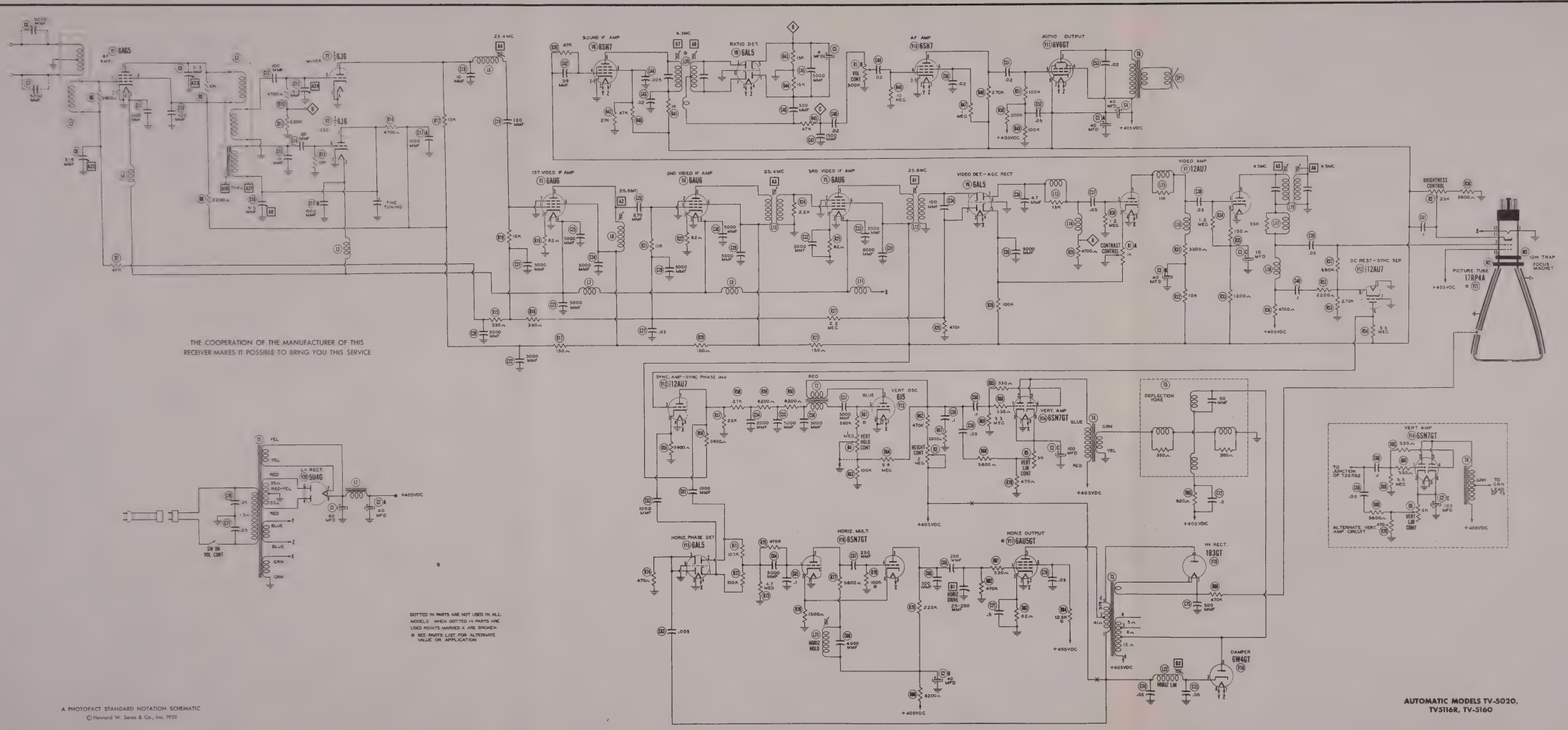
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⊕ SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
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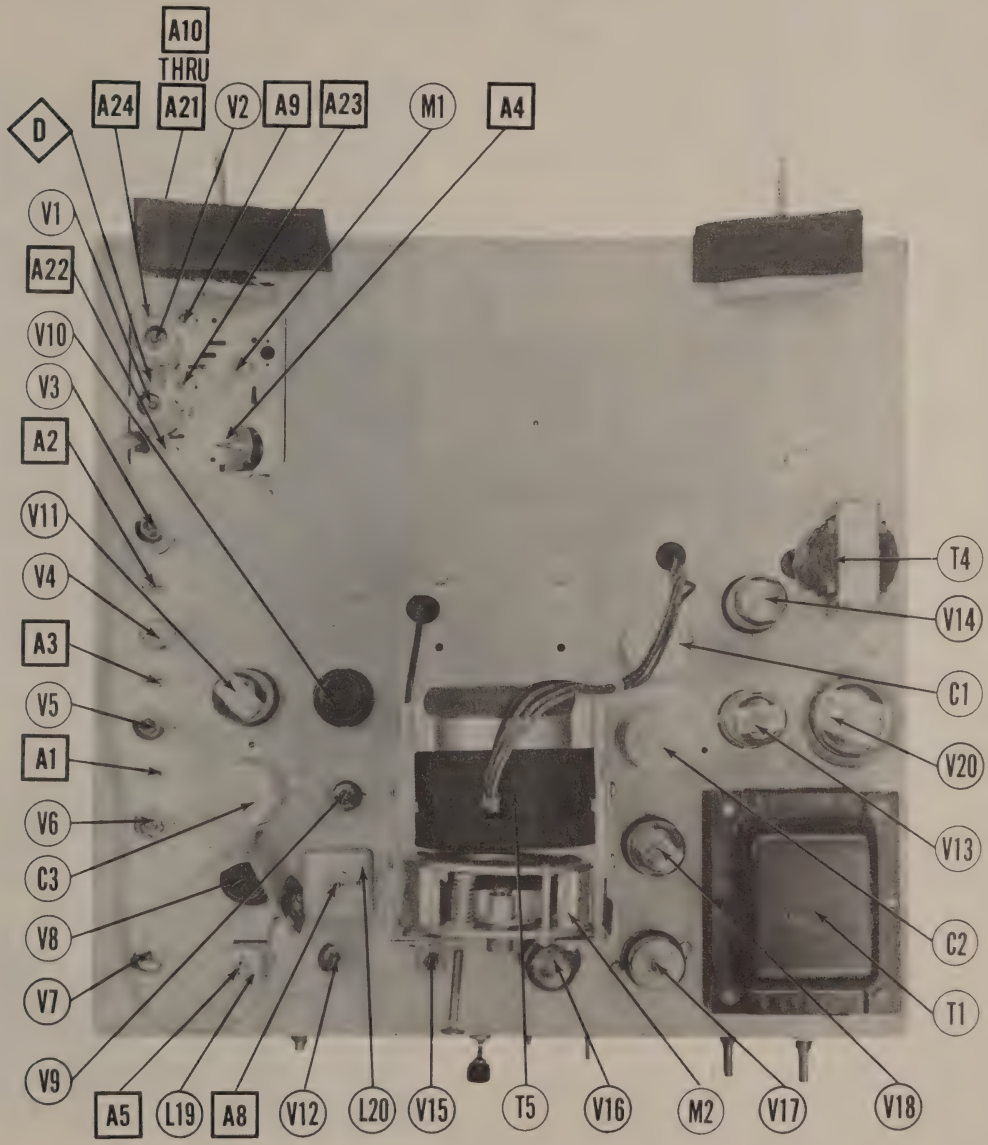
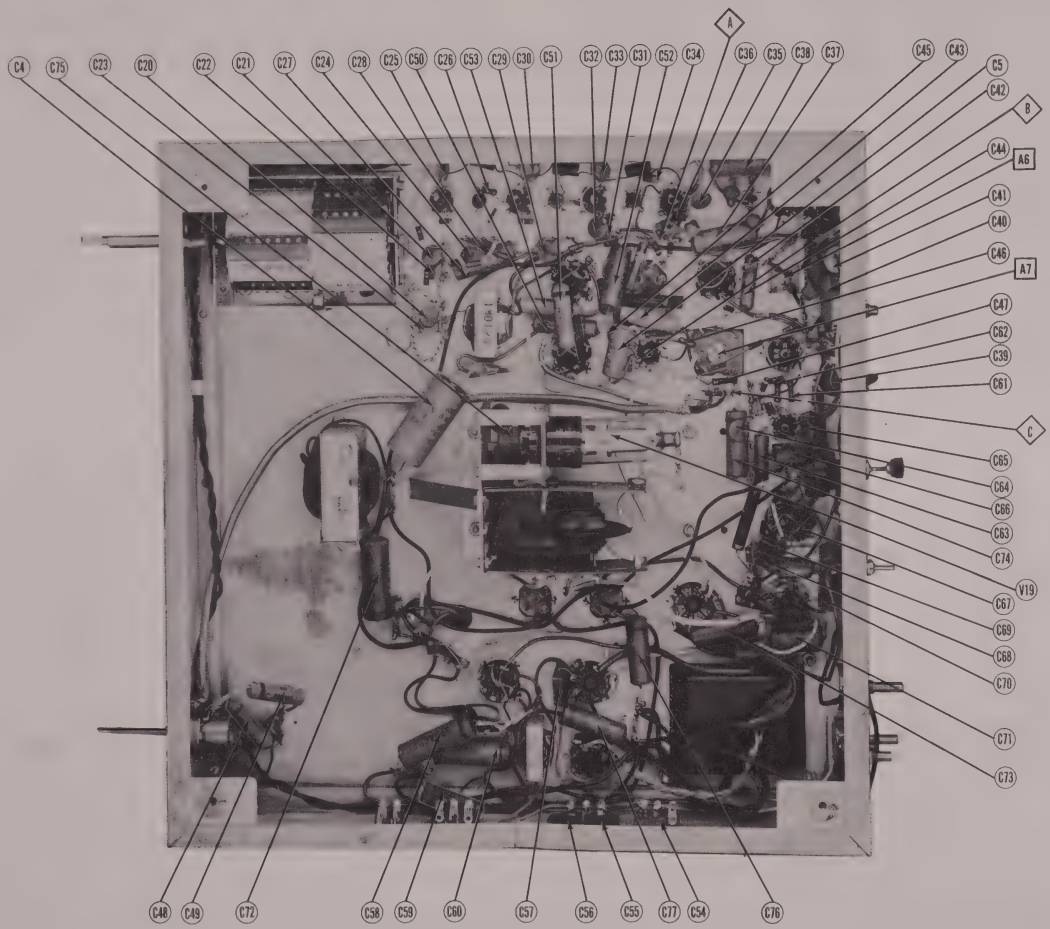
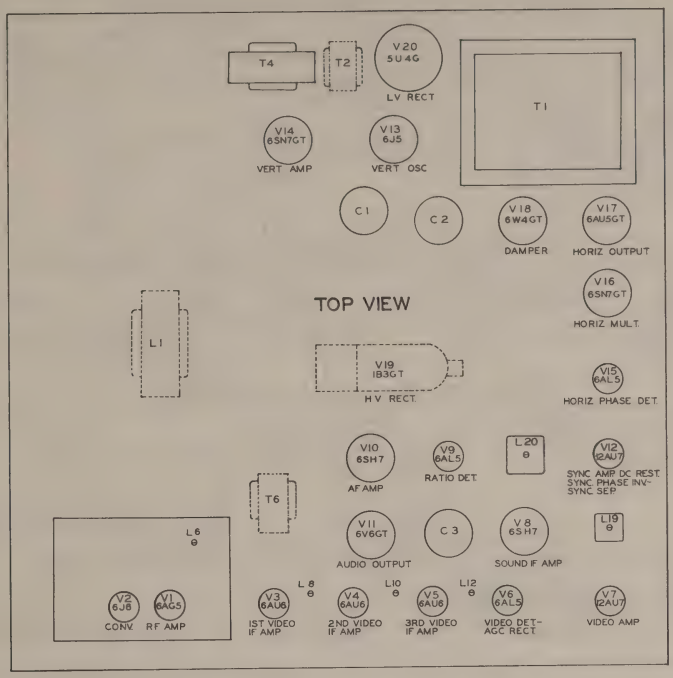
AUTOMATIC MODELS TV-5020, TV5116R, TV-5160

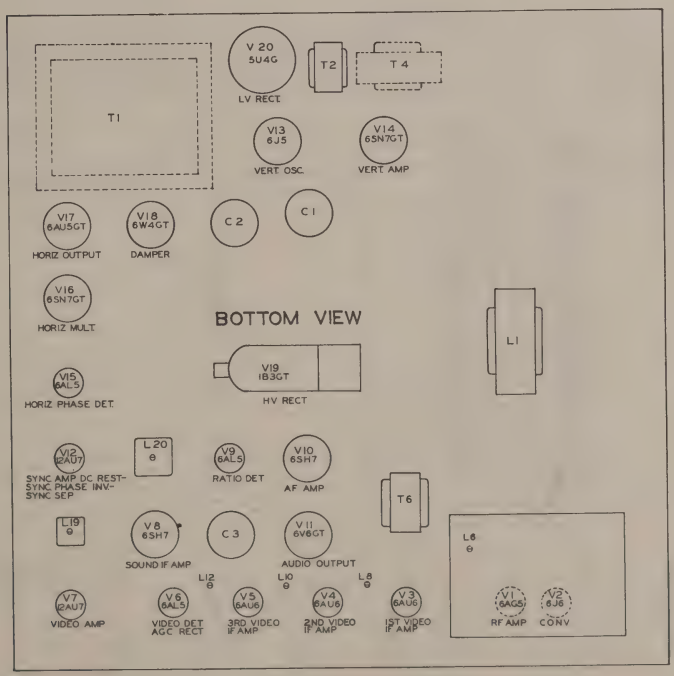



CHASSIS TOP VIEW




CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION




# TUBE PLACEMENT CHART

# ALIGNMENT INSTRUCTIONS

**ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT**

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube, (V16), from its socket.

**VIDEO IF ALIGNMENT**

Remove the converter tube and replace it with a 6J6 which has Pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.
Connect the negative lead of a 3 volt battery to the junction of R16 and R27. Connect the positive lead to chassis.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 1. | Direct | High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis. | 25.6MC (Unmod.) | Any | DC probe to Point (A). Common to chassis. | A1, A2 | Adjust for maximum deflection. |
| 2. | " | " | 23.4MC | " | " | A3, A4 | " |

**OVERALL VIDEO IF RESPONSE CHECK**

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 3. | Direct | High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis. | 24MC (10MC SWP) | 21.25MC 25.75MC | Any | Vert. amp. to Point (A). Low side to chassis. | | Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response. |

**SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM**

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 4. | .01MFD | High side to Pin 7 (grid) of 12AU7 (V7). Low side to chassis. | 4.5MC (Unmod.) | Any | DC probe to Point (B). Common to chassis. | A5, A6, A7 | Adjust for maximum deflection. |
| 5. | " | " | " | " | DC probe to Point (C). Common to chassis. | A8 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. |

**SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE**

Use fequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 4. | .01MFD | High side to Pin 7 (grid) of 12AU7, (V7). Low side to chassis. | 4.5MC (450KC SWP) | 4.5MC | Any | Vert. amp. to Point (B). Low side to chassis. | A5, A6, A7 | Disconnect stabilizer capacitor C5. Adjust for maximum amplitude and symmetry as per figure 2. |
| 5. | " | " | " | " | " | Vert. amp. to Point (C). Low side to chassis. | A8 | Reconnect capacitor C5. Adjust A8 do 4.5MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines. |

**OSCILLATOR ALIGNMENT**

Remove the dummy converter tube and replace the original 6J6 in its socket.
Complete oscillator alignment may not be necessary. If the oscillator seems to be off-frequency approximately the same amount for a majority of the channels, it may be possible to correct them in one step using A9. It should be noted that this is an all-channel oscillator circuit adjustment and should not be adjusted for any individual channel. If adjustment of A9 will not bring all channels well within the range of the fine tuning control it will be necessary to adjust the channel strip adjustment for each channel that is off-frequency. The channel strip adjustments are reached through a hole just to the right of the channel switch shaft. The correct adjustment screw is accessible through this hole as the channel switch is turned to each channel. The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.
Set the fine tuning control to the mid-position of its range.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 6. | Two 120Ω carbon resistors | Across antenna terminals with 120Ω in each lead. | 213MC (10MC SWP) | 211.25MC 215.75MC | 13 | Vert. amp. to Point (A). Low side to chassis. | A10 | Adjust to place sound marker as shown in figure 4; the video marker should be at 50%. |
| | | | 207MC (10MC SWP) | 205.25MC 209.75MC | 12 | | A11 | |
| | | | 201MC (10MC SWP) | 199.25MC 203.75MC | 11 | | A12 | |
| | | | 195MC (10MC SWP) | 193.25MC 197.75MC | 10 | | A13 | |
| | | | 189MC (10MC SWP) | 187.25MC 191.75MC | 9 | | A14 | |
| | | | 183MC (10MC SWP) | 181.25MC 185.75MC | 8 | | A15 | |
| | | | 177MC (10MC SWP) | 175.25MC 179.75MC | 7 | | A16 | |
| | | | 85MC (10MC SWP) | 83.25MC 87.75MC | 6 | | A17 | |
| | | | 79MC (10MC SWP) | 77.25MC 81.75MC | 5 | | A18 | |
| | | | 69MC (10MC SWP) | 67.25MC 71.75MC | 4 | | A19 | |
| | | | 63MC (10MC SWP) | 61.25MC 65.75MC | 3 | | A20 | |
| | | | 57MC (10MC SWP) | 55.25MC 59.75MC | 2 | | A21 | |

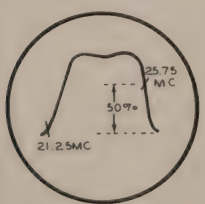


FIG. 1

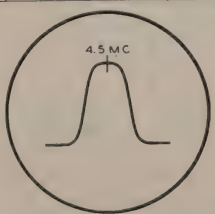


FIG. 2

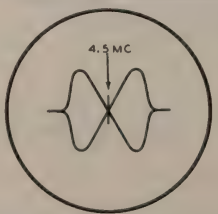


FIG. 3

FIG. 4

# ALIGNMENT INSTRUCTIONS (CONT.)

RF ALIGNMENT

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 7. | Two 120Ω carbon resistors | Across antenna terminals with 120Ω in each lead. | 207MC (10MC SWP) | 205.25MC 209.75MC | 12 | Vert. amp. thru 10KΩ to Point ◇. Low side to chassis. | A22, A23, A24 | Adjust for response curve similar to figure 5 with markers above 90%. |
| 8. | " | " | 213MC (10MC SWP) | 211.25MC 215.75MC | 13 | " | | Check all channels for response similar to figure 5. If markers fall below 70% on any channel make slight adjustment of A22, A23, and A24 with channel switch set for that channel. Recheck all channels to see that they have not been seriously effected. |
| | | | 201MC (10MC SWP) | 199.25MC 203.75MC | 11 | | | |
| | | | 195MC (10MC SWP) | 193.25MC 197.75MC | 10 | | | |
| | | | 189MC (10MC SWP) | 187.25MC 191.75MC | 9 | | | |
| | | | 183MC (10MC SWP) | 181.25MC 185.75MC | 8 | | | |
| | | | 177MC (10MC SWP) | 175.25MC 179.75MC | 7 | | | |
| | | | 85MC (10MC SWP) | 83.25MC 87.75MC | 6 | | | |
| | | | 79MC (10MC SWP) | 77.25MC 81.75MC | 5 | | | |
| | | | 69MC (10MC SWP) | 67.25MC 71.75MC | 4 | | | |
| | | | 63MC (10MC SWP) | 61.25MC 65.75MC | 3 | | | |
| | | | 57MC (10MC SWP) | 55.25MC 59.75MC | 2 | | | |

FIG.5

# VOLTAGE AND RESISTANCE MEASUREMENTS

## VOLTAGE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6AG5 | -.6VDC | 0V | 6.3VAC | 0V | 105VDC | 105VDC | 0V | | |
| V 2 | 6J6 | 90VDC | 75VDC | 6.3VAC | 0V | -1.6VDC | §-3VDC | 0V | | |
| V 3 | 6AU6 | -.6VDC | 0V | 0V | 6.3VAC | 140VDC | 140VDC | .7VDC | | |
| V 4 | 6AU6 | -.6VDC | 0V | 0V | 6.3VAC | 145VDC | 145VDC | .6VDC | | |
| V 5 | 6AU6 | 0V | 0V | 0V | 6.3VAC | 150VDC | 150VDC | .6VDC | | |
| V 6 | 6AL5 | 0V | -3VDC | 0V | 6.3VAC | 0V | 0V | -.6VDC | | |
| V 7 | 12AU7 | 105VDC | 0V | 3.9VDC | 0V | 0V | ▲175VDC | ▲.8VDC | ▲14VDC | |
| V 8 | 6SH7 | 0V | ¶ | 0V | -.6VDC | 0V | 40VDC | ¶ | 140VDC | |
| V 9 | 6AL5 | -.1VDC | -.1VDC | ¶ | ¶ | .2VDC | 0V | -.2VDC | | |
| V 10 | 6SH7 | 0V | ¶ | 0V | -.4VDC | 0V | 25VDC | ¶ | 50VDC | |
| V 11 | 6V6GT | 0V | ¶ | ▲240VDC | ▲255VDC | ▲-14VDC | ▲-13VDC | ¶ | 150VDC | |
| V 12 | 12AU7 | 80VDC | 3.6VDC | 5.8VDC | 0V | 0V | 3.6VDC | 0V | 2.7VDC | 6.3VAC |
| V 13 | 6J5 | 0V | 0V | 300VDC<br>50VDC | 80VDC | -15VDC<br>-110VDC | 0V<br>-75VDC | 6.3VAC | 0V | |
| V 14 | 6SN7GT | 0V | 400VDC<br>360VDC | 25VDC<br>10VDC | 0V | 400VDC<br>360VDC | 25VDC<br>10VDC | 0V | 6.3VAC | |
| V 15 | 6AL5 | 4.2VDC | -4.2VDC | 0V | 6.3VAC | 0V | 0V | 0V | | |
| V 16 | 6SN7GT | -.2VDC | 300VDC | 11VDC | -7.2VDC | 120VDC | 11VDC | 0V | 6.3VAC | |
| V 17 | 6AU5GT | -7.4VDC | 6.3VAC | 6.5VDC | 0V | • | 0V | 0V | 155VDC | |
| V 18 | 6W4GT | 0V | 0V | 560VDC | 0V | 405VDC | 0V | ¶ | ¶ | |
| V 19 | 1B3GT | • DO NOT MEASURE | | | | | | | | |
| V 20 | 5U4G | 0V | 410VDC | 0V | 400VAC | 0V | 400VAC | 0V | 410VDC | |
| V 21 | 17BP4A | 0V | .8VDC | PIN 10<br>405VDC | PIN<br>150VDC | 11<br>35VDC | PIN 12<br>6.3VAC | | | |

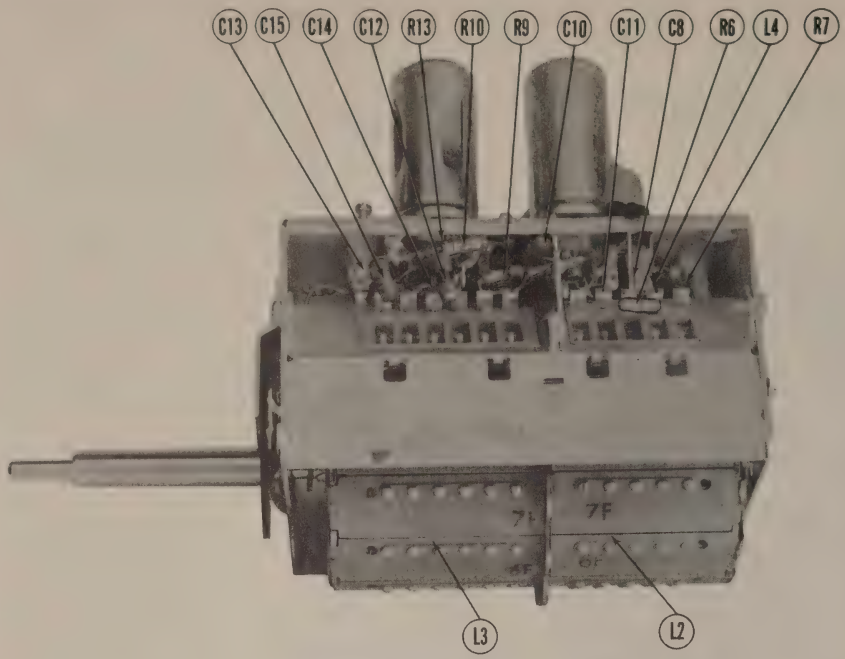
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
¶ 6.3VAC MEASURED ACROSS FILAMENTS
▲ MEASURED FROM PIN 8 OF V11
§ TAKEN WITH VACUUM TUBE VOLTMETER

## RESISTANCE READINGS

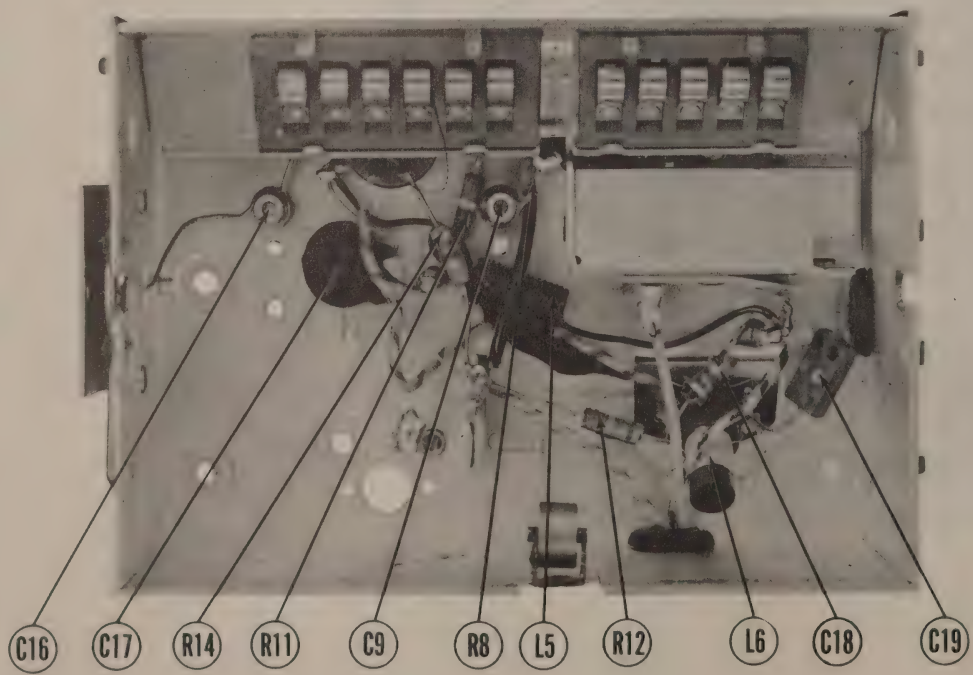
| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6AG5 | 2.7Meg | 0Ω | .1Ω | 0Ω | ▲2.6KΩ | ▲2.6KΩ | 0Ω | | |
| V 2 | 6J6 | ▲5.1KΩ | ▲15KΩ | .1Ω | 0Ω | 225KΩ | 10KΩ | 0Ω | | |
| V 3 | 6AU6 | 2.7Meg | 0Ω | 0Ω | .1Ω | ▲300Ω | ▲300Ω | 82Ω | | |
| V 4 | 6AU6 | 2.7Meg | 0Ω | 0Ω | .1Ω | ▲150Ω | ▲150Ω | 82Ω | | |
| V 5 | 6AU6 | .2Ω | 0Ω | 0Ω | .1Ω | ▲.3Ω | ▲0Ω | 82Ω | | |
| V 6 | 6AL5 | .1Ω | 470KΩ | 0Ω | .1Ω | 0Ω | 0Ω | 4.7KΩ | | |
| V 7 | 12AU7 | ▲13KΩ | 1.2Meg | 1KΩ | 0Ω | 0Ω | †4.7KΩ | ▲1.2Meg | ▲1.3KΩ | .1Ω |
| V 8 | 6SH7 | 0Ω | Inf. | 0Ω | 47KΩ | 0Ω | ▲22KΩ | Inf. | ▲1KΩ | |
| V 9 | 6AL5 | Inf. | Inf. | Inf. | Inf. | 15KΩ | 0Ω | 15KΩ | | |
| V 10 | 6SH7 | 0Ω | Inf. | 0Ω | 10Meg | 0Ω | ▲1Meg | Inf. | ▲270KΩ | |
| V 11 | 6V6GT | Inf. | Inf. | †310Ω | †26Ω | 200KΩ | 100KΩ | Inf. | 10KΩ | |
| V 12 | 12AU7 | ▲5.6KΩ | ▲3.3Meg | 3.9KΩ | 0Ω | 0Ω | ▲3.3Meg | 0Ω | 270KΩ | .1Ω |
| V 13 | 6J5 | Inf. | 0Ω | #470KΩ<br>#2.7Meg | 50KΩ | 560KΩ<br>1.6Meg | 0Ω<br>1Meg | .1Ω | 0Ω | |
| V 14 | 6SN7GT | 3.3Meg | †1.3KΩ | 5.5KΩ<br>470Ω | 3.3Meg | †1.3KΩ | 5.5KΩ<br>470Ω | 0Ω | .1Ω | |
| V 15 | 6AL5 | 4.8Meg | 4.8Meg | 0Ω | .1Ω | 470Ω | 0Ω | 470Ω | | |
| V 16 | 6SN7GT | 5.2Meg | †14KΩ | 1.5KΩ | 100KΩ | †230KΩ | 1.5KΩ | 0Ω | .1Ω | |
| V 17 | 6AU5GT | 470KΩ | .1Ω | 82Ω | Inf. | #70Ω | Inf. | 0Ω | †13KΩ | |
| V 18 | 6W4GT | Inf. | Inf. | 8Meg | Inf. | †38Ω | Inf. | Inf. | Inf. | |
| V 19 | 1B3GT | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | TOP CAP<br>#450Ω |
| V 20 | 5U4GT | Inf. | 30KΩ | Inf. | 55Ω | Inf. | 55Ω | Inf. | 30KΩ | |
| V 21 | 17BP4A | 0Ω | 950KΩ | PIN 10<br>†26Ω | PIN<br>10KΩ | 11<br>5.6KΩ | PIN 12<br>.1Ω | | | |

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
▲ MEASURED FROM PIN 8 OF V11
† MEASURED FROM PIN 8 OF V20
# MEASURED FROM PIN #3 OF V18

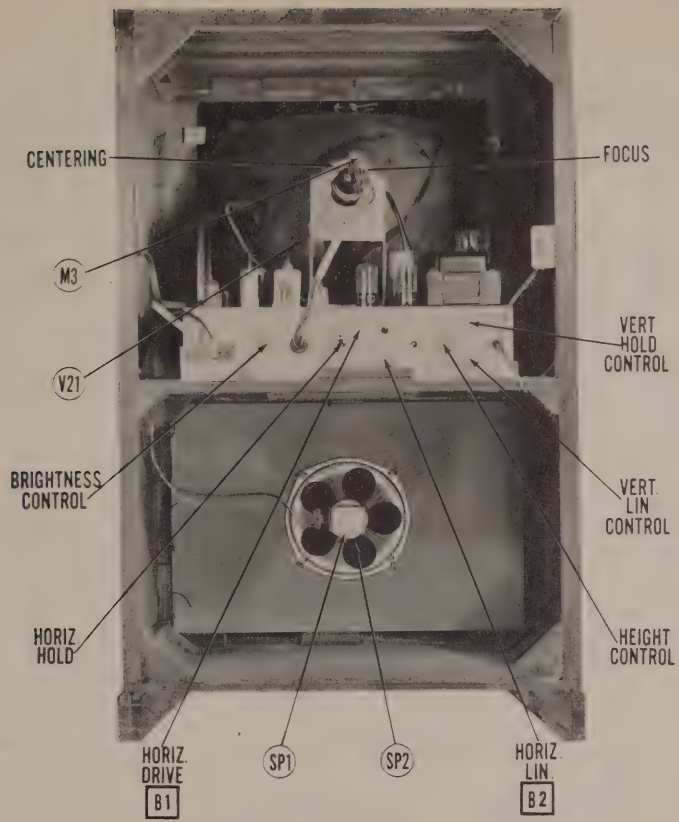
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.




RF TUNER-RIGHT SIDE




RF TUNER-BOTTOM VIEW




CABINET-REAR VIEW

## HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Adjust the horizontal hold slug until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer, (B1), clockwise as far as possible without crowding the right side of the picture.

If vertical lines appear near the left side of the picture, back off the trimmer just sufficiently to remove the lines.

Adjust the horizontal linearity slug, (B2), until the picture is symmetrical from left to right.

Since width and horizontal linearity are effected by the drive trimmer, (B1), it may be necessary to adjust B1 and B2 alternately to obtain proper width with good horizontal linearity.

If sufficient width cannot be obtained change the tap on the secondary of T3 and readjust B1 and B2.

## DISASSEMBLY INSTRUCTIONS

1. Remove four push-on type control knobs.
2. Remove four wood screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Remove antenna terminal strip.
5. Remove interlock plug.
6. Disconnect speaker.
7. Remove four metal screws from bottom of chassis. Remove chassis.
8. Remove four wing nuts from speaker. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.

# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA: AUTOMATIC PART No. | STANDARD REPLACEMENT | RMA BASE TYPE | NOTES |
|---|---|---|---|---|---|
| V1 | RF Amplifier | 6AG5 | 6AG5 | TBD | |
| V2 | Converter | 6J8 | 6J8 | T8F | |
| V3 | 1st Video IF Amp. | 6AU6 | 6AU6 | T8K | |
| V4 | 2nd Video IF Amp. | 6AU6 | 6AU6 | T8K | |
| V5 | 3rd Video IF Amp. | 6AU8 | 6AU8 | T8K | |
| V6 | Video Detector - AGC Rectifier | 6AL5 | 6AL5 | 6BT | |
| V7 | Video Amplifier | 12AU7 | 12AU7 | 9A | |
| V8 | Sound IF Amp. | 6BH7 | 6BH7 | 8BK | |
| V9 | Ratio Detector | 6AL5 | 6AL5 | 6BT | |
| V10 | AF Amplifier | 6BH7 | 6BH7 | 8BK | |
| V11 | Audio Output | 6V6GT | 6V6GT | T4C | |
| V12 | Sync. Phase Inv. - Sync. Separator - Sync. Amplifier - DC Restorer | 12AU7 | 12AU7 | 9A | |
| V13 | Vert. Oscillator | 6J5 | 6J5 | 8Q | |
| V14 | Vert. Amplifier | 5U4GT | 5U4GT | 8BD | |
| V15 | Horiz. Phase Det. | 6AL5 | 6AL5 | 6BD | |
| V16 | Horiz. Multi. | 6SN7GT | 6SN7GT | 8BD | |
| V17A | Horiz. Output | 6AU5 | 6AU5 | 6CK | |
| B | Horiz. Output | 6BG6G | 6BG6G | 5BT | |
| V18 | Damper | 6W4GT | 6W4GT | 4CG | |
| V19 | B.V. Rectifier | 1B3GT | 1B3GT | 3C | |
| V20 | L.V. Rectifier | 5U4G | 5U4G | 5T | |
| V21A | Picture Tube | 17BP4A | 17BP4A | 12D | |
| B | Picture Tube | 17KP4 | 17KP4 | 12D | |
| C | Picture Tube | 16KP4 | 16KP4 | 12D | |
| D | Picture Tube | 16RP4 | 16RP4 | 12D | |
| E | Picture Tube | 16TP4 | 16TP4 | 12D | |
| F | Picture Tube | 20CP4 | 20CP4 | 12D | |
| G | Picture Tube | 20DP4A | 20DP4A | 12D | |

## CAPACITORS

**Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING: CAP. | RATING: VOLT | REPLACEMENT DATA: AUTOMATIC PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C1 | 80 | 450 | CE-502 | AF88J | | UP8045 | | TVL-2764 | Filter |
| C2A | 40 | 450 | CE-500 | AFH88J16B | | UPT4445 | | TVL-3764 | a Filter |
| B | 40 | 350 | | | | V10 | | | b Decoupling |
| C | 100 | 75 | | | | | | | c Vert. Output Cathode |
| C3A | 40 | 350 | CE-501 | AFH882J | | UPT44145 | | TVL-3785 | a Decoupling |
| B | 40 | 250 | | | | | | | b Damper |
| C | 10 | 350 | | | | | | | a V. Amp. Dec. |
| C4 | 40 | 350 | CE-503 | PRS450/40 | | BR4035 | | TVA-1611 | b V. Amp. Dec. |
| C5 | 4 | 25 | CE-504 | PRS150/4 | | BR550 | | TVA-1203 | Filter |
| C6 | 5000 | | | BPD-005 | DD-502 | | 81L-005 | 29C1 | Stabilizing Cap |
| C7 | 5000 | | | BPD-005 | DD-502 | | 81L-005 | 29C1 | Ant. Coupling * |
| C8 | 3-9 | | | | 829-3 | | | | Ant. Coupling * |
| C9 | .5-3 | | | | 829-3 | | | | Variable Trimmer |
| C10 | 120 | | | SD120 | DC-121 | | GP2K-120 | 19C29 | Variable Trimmer |
| C11 | 1000 | | | BPD-001 | DD-102 | | 80L-001 | 19C1 | RF Amp. Fil. |
| C12 | 100 | | | SD100N750 | TCN-100 | | N750L-100 | 29C16 | RF Coupling |
| C13 | .5-3 | | | | 829-3 | | | | Variable Trimmer |
| C14 | 20 | | | SD20NPO | TCZ-20 | | NPOK-20 | | Osc. Grid Cap |
| C15 | 10 | | | SD10N750 | TCN-10 | | N750K-10 | 19C4 | Fixed Trimmer |
| C16 | .5-3 | | | | 829-3 | | | | Variable Trimmer |
| C17A | 1000 | | | BPD-2X001 | DD-2-102 | | 81Z-2X001 | 29C7 | RF Bypass |
| B | 100 | | | | | | | | Conv. Filament |
| C18 | 10 | | | SD10NPO | TCZ-10 | | NPOK-10 | 19C3 | Fixed Trimmer |
| C19 | 120 | | | SD120 | DC-121 | | GP2K-120 | 19C29 | IF Coupling |
| C20 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | AGC Filter |
| C21 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | AGC Filter |
| C22 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | RF Bypass |
| C23 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | Filament Bypass |
| C24 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | 1st V. IF Dec. |
| C25 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | 1st V. IF Fil. |
| C26 | 270 | | | SD270 | DC-271 | 5WSY25 | GP2K-270 | 19C31 | IF Coupling |
| C27 | .05 | 600 | | P686-05 | DF-503 | PTE685 | | 6TM-S5 | AGC Filter |
| C28 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | AGC Filter |
| C29 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | 2nd V. IF Dec. |
| C30 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | 2nd V. IF Fil. |
| C31 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | 3rd V. IF Dec. |
| C32 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | 3rd V. IF Cathode |
| C33 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | 3rd V. IF Fil. |
| C34 | 100 | | | SD100 | D6-101 | 5WSY21 | GP2L-100 | 19C1 | IF Coupling |
| C35 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | DAGC Decoupling |
| C36 | 4-7 | | | SI4-7NPO | TCZ-4, 7 | 5WSV5 | NPOK-4, 7 | MS-55 | V. Diode Filter |
| C37 | .05 | 600 | | P686-05 | DF-503 | PTE685 | | 6TM-S5 | Video Coupling |
| C38 | .05 | 600 | | P686-05 | DF-503 | PTE685 | | 6TM-S5 | Video Coupling |
| C39 | .05 | 600 | | P686-05 | DF-503 | PTE685 | | 6TM-S5 | Video Coupling |
| C40 | .1 | 600 | | P686-1 | DF-104 | PTE6P1 | | 6TM-S5 | Video Coupling |
| C41 | .1 | 600 | | P686-1 | DF-104 | PTE6P1 | | 6TM-P1 | Pic. Tube Cathode |
| C42 | 39 | | | SD39 | D6-390 | 5WQ4 | GP1K-39 | 19F44 | IF Coupling |
| C43 | .02 | 600 | | P686-02 | DF-203 | PTE682 | | 6TM-S2 | S. IF Plate Dec. |
| C44 | .005 | 600 | | P686-005 | D6-502 | PTE6D5 | 81L-005 | 6TM-D5 | S. IF Screen |
| C45 | 5000 | | | BPD-005 | DD-502 | 1D5D5 | 81L-005 | 29C1 | RF Bypass |
| C46 | 500 | | | SI500 | D6-501 | 5WSY5 | GP2K-500 | 19C32 | Diode Load Cap |
| C47 | 1500 | | | SD500 | D6-152 | 1WSD5 | GP2L-005 | 29C9 | De-emphasis |
| C48 | .02 | 600 | | P686-02 | DF-203 | PTE682 | | 6TM-S2 | Audio Coupling |
| C49 | .02 | 600 | | P686-02 | DF-203 | PTE682 | | 6TM-S2 | Audio Coupling |
| C50 | .02 | 600 | | P686-02 | DF-203 | PTE682 | | 6TM-S2 | AF Amp. Screen |
| C51 | .02 | 600 | | P686-02 | DF-203 | PTE682 | | 6TM-S2 | Audio Coupling |
| C52 | .05 | 600 | | P686-05 | DF-503 | PTE685 | | 6TM-S5 | Bias Filter |
| C53 | .02 | 600 | | P686-02 | DF-203 | PTE682 | | 6TM-S2 | Output Plate |
| C54 | 2000 | 500 | | 1467-002 | D6-202 | 1WSD2 | GP2M-002 | 1FM-22 | Integrator Net |
| C55 | 5000 | 500 | | 1467-005 | D6-502 | 1D5D5 | 81L-005 | 1FM-25 | Integrator Net |
| C56 | 5000 | 500 | | 1467-005 | D6-502 | 1D5D5 | 81L-005 | 1FM-25 | Integrator Net |
| C57 | 5000 | 500 | | 1467-005 | D6-502 | 1D5D5 | 81L-005 | 1FM-25 | Vert. Osc. Grid |

## CAPACITORS (CONT.)

| ITEM No. | RATING: CAP. | RATING: VOLT | REPLACEMENT DATA: AUTOMATIC PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C58 | .1 | 600 | | P686-1 | | PTE6P1 | | 6TM-P1 | Vert. Discharge |
| C59 | .05 | 600 | | P686-05 | | PTE685 | | 6TM-S5 | Vert. Discharge |
| C60 | .1 | 600 | | P686-1 | DF-104 | PTE6P1 | | 6TM-P1 | Vert. Sweep Coupling |
| C61 | 1000 | | | SD000 | D6-102 | 1WSD1 | GP2L-001 | 19C1 | Horiz. Sync. Coupling |
| C62 | 1000 | | | SD000 | D6-102 | 1WSD1 | GP2L-001 | 19C1 | Horiz. Sync. Coupling |
| C63 | .008 | 600 | | P686-005 | D6-502 | PTE6D5 | 81L-005 | 6TM-D5 | Horiz. Feedback |
| C64 | 5000 | | | BPD-005 | D6-502 | 1D5D5 | 81L-005 | 29C1 | AFC Filter |
| C65 | 600 | | | P686-1 | DF-104 | PTE6P1 | .1 | 6TM-P1 | AFC Filter |
| C66 | 4000 | 500 | | 1464-004 | | 1DR5D4 | | MS-24 | Fixed Trimmer |
| C67 | 250 | 500 | | 1466-00025 | D6-251 | 5WS725 | GP2K-250 | 1FM-325 | Horiz. MV Feedback |
| C68 | 500 | 500 | | 1466-0005 | D6-501 | 5WS75 | GP2K-500 | 1FM-35 | Horiz. Discharge |
| C69 | 250 | 500 | | 1466-00025 | D6-251 | 5WS725 | GP2K-250 | 1FM-325 | Horiz. Sweep Coupling |
| C70 | .05 | 600 | | P686-05 | DF-503 | PTE685 | | 6TM-S5 | Horiz. Output Screen |
| C71 | .5 | 100 | | P185-100 | | GT2P5 | | 2TM-P5 | Horiz. Output Cathode |
| C72 | .5 | 600 | | 484-5 | | GT4P5 | | 4TM-P5 | Horiz. Sweep Coupling |
| C73 | .05 | 600 | | P686-05 | | PTE685 | | 6TM-S5 | Damper Filter |
| C74 | .05 | 600 | | P686-05 | | PTE685 | | 6TM-S5 | Damper Filter |
| C75 | 500 | 20000 | | SY20C | TV3-500 | | | | H.V. Filter |
| C76 | .05 | 600 | | P686-05 | DF-503 | PTE685 | | 6TM-S5 | Line Filter |
| C77 | .05 | 600 | | P686-05 | DF-503 | PTE685 | | 6TM-S5 | Line Filter |

* Not used in all models.

## CONTROLS

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: AUTOMATIC PART No. | IRC PART No. | CLAROSTAT PART No. | CENTRALAB PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| R1A | 1000Ω | ½ | TRV-121 | | | | Contrast Control - Front |
| B | 500KΩ | ½ | | | | | Volume Control and SW - Rear |
| R2A | 25K | ½ | TRV-122 | QU-120 | AM-40-5 | AN-26 | Brightness Control |
| B | Shaft | | Not req. | Not req. | FK3-1/4 | AK-1 | Attach to R2A Per Instructions |
| R3A | 2Meg | ½ | TRV-90 | QU-139 | AM-83-9 | AN-75 | Height Control |
| B | Shaft | | Not req. | Not req. | FK3-1/4 | AK-1 | Attach to R3A Per Instructions |
| R4A | 1Meg | ½ | TRV-120 | QU-137 | AM-81-8 | AN-69 | Vertical Hold Control |
| B | Shaft | | Not req. | Not req. | FK3-1/4 | AK-1 | Attach to R4A Per Instructions |
| R5A | 5000Ω | ½ | TRV-81 | QU-114 | AG-19-8 | AN-10 | Vertical Linearity Control |
| B | Shaft | | Not req. | Not req. | FK5-1/4 | AK-1 | Attach to R5A Per Instructions |

## RESISTORS

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: AUTOMATIC PART No. | IRC PART No. | IDENTIFICATION CODES: ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED |
|---|---|---|---|---|---|
| R6 | 3900Ω | ½ | | BTS-3900 | Antenna Coil Shunt |
| R7 | 47KΩ 20% | ½ | | BTS-47K | AGC Network |
| R8 | 220Ω 20% | ½ | | BTS-2200 | RF Amp. Decoupling |
| R9 | 10KΩ | ½ | | BTS-10K | RF Coil Shunt |
| R10 | 470Ω | ½ | | BTS-4700 | RF Amp. Grid |
| R11 | 220KΩ 20% | ½ | | BTS-220K | Mixer Grid |
| R12 | 15KΩ 20% | ½ | | BTS-15K | Mixer Plate |
| R13 | 10KΩ | ½ | | BTS-10K | Osc. Grid |
| R14 | 4700Ω | ½ | | BTS-4700 | Osc. Plate |
| R15 | 330Ω 20% | ½ | | BTS-330 | AGC Network |
| R16 | 330Ω 20% | ½ | | BTS-330 | AGC Network |
| R17 | 150Ω 20% | ½ | | BTS-150 | Decoupling |
| R18 | 10KΩ 20% | ½ | | | 1st Video IF Amp. Grid |
| R19 | 82Ω | ½ | | BTS-82 | 1st Video IF Amp. Cathode |
| R20 | 150Ω 20% | ½ | | BTS-150 | Decoupling |
| R21 | 1KΩ | ½ | | | 2nd Video IF Amp. Grid |
| R22 | 82Ω | ½ | | BTS-82 | 2nd Video IF Amp. Cathode |
| R23 | 150Ω 20% | ½ | | BTS-150 | Decoupling |
| R24 | 22KΩ | ½ | | | 3rd Video IF Transformer Shunt |
| R25 | 82Ω | ½ | | BTS-82 | 3rd Video IF Amp. Cathode |
| R26 | 470KΩ 20% | ½ | | BTS-470K | AGC Rectifier Diode Load |
| R27 | 2.2Meg 20% | ½ | | BTS-2.2Meg | AGC Network |
| R28 | 100KΩ | ½ | | BTS-100K | Voltage Divider |
| R29 | 4700Ω 20% | ½ | | BTS-4700 | Video Det. Diode Load |
| R30 | 1.2Meg 20% | ½ | | BTS-1.2Meg | Video Amp. Grid |
| R31 | 330Ω 20% | 1 | | BTA-330 | Video Amp. Plate |
| R32 | 10KΩ | 2 | | BTB-10K | Video Amp. Decoupling |
| R33 | 1200Ω | ½ | | BTA-1200 | Bias Network |
| R34 | 1.2Meg 20% | ½ | | BTS-1.2Meg | Video Amp. Grid |
| R35 | 150Ω 20% | ½ | | BTS-150 | Video Amp. Cathode |
| R36 | 4700Ω | ½ | | BTA-4700 | Video Amp. Plate |
| R37 | 680KΩ | ½ | | BTS-680K | Picture Tube Grid |
| R38 | 5600Ω | ½ | | BTS-5600 | Picture Tube Cathode |
| R39 | 47KΩ | ½ | | BTS-47K | Sound IF Amp. Grid |
| R40 | 47KΩ | ½ | | BTS-47K | Sound IF Amp. Screen |
| R41 | 100Ω | ½ | | BTS-100 | Sound IF Amp. Plate Decoupling |
| R42 | 27KΩ | ½ | | BTS-27K | Voltage Divider |
| R43 | 15KΩ | ½ | | BTS-15K | Ratio Det. Diode Load |
| R44 | 15KΩ | ½ | | BTS-15K | Ratio Det. Diode Load |
| R45 | 47KΩ | ½ | | BTS-47K | De-emphasis |
| R46 | 10Meg | ½ | | BTS-10Meg | AF Amp. Grid |
| R47 | 1Meg | ½ | | BTS-1Meg | AF Amp. Screen |
| R48 | 270KΩ | ½ | | BTS-270K | AF Amp. Plate |
| R49 | 100KΩ | ½ | | BTS-100K | Bias Network |
| R50 | 200KΩ | ½ | | | Bias Network |
| R51 | 100KΩ | ½ | | BTS-100K | Output Grid |
| R52 | 2200Ω 20% | ½ | | BTS-2200 | Isolation |
| R53 | 270KΩ 20% | ½ | | BTS-270K | Sync. Sep. Cathode |
| R54 | 3.3Meg 20% | ½ | | BTS-3.3Meg | Sync. Sep. Plate |
| R55 | 3900Ω 20% | ½ | | BTS-3900 | Sync. Amp.-Phase Inv. Cathode |
| R56 | 5600Ω | 2 | | BTB-5600 | Sync. Amp. - Phase Inv. Plate |
| R57 | 22KΩ | 1 | | BTA-22K | Voltage Divider |
| R58 | 27KΩ | ½ | | BTS-27K | Integrator |
| R59 | 8200Ω | ½ | | BTS-8200 | Integrator |
| R60 | 8200Ω | ½ | | BTS-8200 | Integrator |
| R61 | 560KΩ | ½ | | BTS-560K | Vert. Osc. Grid - See Note 1 |
| R62 | 470KΩ | ½ | | BTS-470K | Vert. Osc. Plate |
| R63 | 100KΩ | ½ | | BTS-100K | Voltage Divider |

## RESISTORS (CONT.)

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: AUTOMATIC PART No. | IRC PART No. | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| R64 | 6.8Meg | ½ | | BTS-6.8Meg | Voltage Divider |
| R65 | 330Ω 20% | ½ | | | Parasitic Suppressor |
| R66 | 330Ω 20% | ½ | | | Parasitic Suppressor |
| R67 | 3300Ω 20% | ½ | | BTS-3300 | Vertical Peaking |
| R68 | 5600Ω 20% | ½ | | BTS-5600 | Vertical Peaking |
| R69 | 3.3Meg 20% | ½ | | BTS-3.3 Meg | Vertical Amp. Grid |
| R70 | 470Ω | ½ | | BTS-470 | Vertical Amp. Cathode |
| R71 | 100KΩ | ½ | | BTS-100K | Horizontal Phase Det. Diode Load |
| R72 | 100KΩ | ½ | | BTS-100K | Horizontal Phase Det. Diode Load |
| R73 | 4.7Meg | ½ | | BTS-4.7Meg | Horizontal Phase Det. Diode Load |
| R74 | 470Ω | ½ | | BTS-470 | Horizontal Output Screen - See Note 3 |
| R75 | 470KΩ 20% | ½ | | BTS-470K | Horizontal AFC Filter |
| R76 | 150Ω 20% | ½ | | BTS-1500 | Horizontal MV Cathode |
| R77 | 5600Ω 20% | ½ | | BTS-5600 | Horizontal MV Plate |
| R78 | 100KΩ | ½ | | BTS-100K | Horizontal MV Grid - See Note 2 |
| R79 | 220KΩ 20% | ½ | | BTS-220K | Horizontal MV Plate |
| R80 | 8200Ω 5% | 2 | | BTB-8200-5% | Horizontal MV Decoupling |
| R81 | 330Ω 20% | ½ | | | Parasitic Suppressor |
| R82 | 470KΩ 20% | ½ | | BTS-470K | Horizontal Output Grid |
| R83 | 82Ω 20% | 1 | | BW-1-82 | Horizontal Output Cathode |
| R84 | 12.5KΩ | 2 | | | Horizontal Output Screen - See Note 3 |
| R85 | 820Ω 20% | ½ | | BTS-820 | Voltage Divider |
| R86 | 470KΩ 20% | 1 | | | HV Filter |

Note 1. Some models use 500KΩ resistor in this application.
Note 2. Some models use 150KΩ resistor in this application.
Note 3. Some models use series-parallel combination to obtain desired value.

## TRANSFORMER (POWER)

| ITEM No. | RATING: PRI. | RATING: SEC. 1 | RATING: SEC. 2 | RATING: SEC. 3 | REPLACEMENT DATA: AUTOMATIC PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. |
|---|---|---|---|---|---|---|---|---|
| T1 | 117VAC ④ 1.7A | 780VCT .190ADC ⑤ | 5VAC ⑤ 3A | 6.3VAC ⑤ 2.6A SEC. 4 6.3VAC ⑤ 5.5A | NE-899-P | P-8159 and P-5014 ③ | P-3067 | |

③ Mount where space permits for SEC. #3.

## TRANSFORMER (SWEEP CIRCUITS)

| ITEM No. | RATING: DC RESISTANCE PRI. | RATING: DC RESISTANCE SEC. | REPLACEMENT DATA: AUTOMATIC PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | NOTES |
|---|---|---|---|---|---|---|---|
| T2 | 205Ω Tap 41Ω | 1.1KΩ 230Ω Taps 12Ω, 18Ω SEC. 2 6Ω 11Ω | LA-449 ① A-8111 ① | A-3000 ① A-8130 | HV5-8 | TS01 ① | Vertical Block Osc. Trans Horizontal Output Trans. |
| T4 TSA | 1.3KΩ 19Ω | | NE-664-8 J70-14 | A-8112 ① | A-3036 ① MDF-70 | TS02 ① | Vertical Output Trans. Horizontal Deflection Coil |
| B | 62Ω | | | | | | Vertical Deflection Coil |

① Drill one new mounting hole.
② 12Ω tap only secondary winding used.

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING: IMPEDANCE PRI. | RATING: IMPEDANCE SEC. | RATING: DC RES. PRI. | RATING: DC RES. SEC. | REPLACEMENT DATA: AUTOMATIC PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| T0 | 4.5KΩ | 3.2Ω | 285Ω | .42Ω | T0-908 | A-3849 ① | A-3019 ① | R0-9 | ① Drill one new mounting hole. |

## SPEAKER

| ITEM No. | RATINGS: FIELD RES. | RATINGS: V. C. IMP. | REPLACEMENT DATA: AUTOMATIC PART No. | JENSEN PART No. | QUAM PART No. | NOTES |
|---|---|---|---|---|---|---|
| SP1 | PM | 3.2Ω | PM908-1 | ST10 Mod. P8-T | 8A31 | |
| | CONE DIA. | V. C. DIA. | | | | |
| SP2 | 7 3/8" | 9/16" | | | | |

## FILTER CHOKE

| ITEM No. | RATINGS: TOTAL DIRECT CURRENT | RATINGS: D.C. RESISTANCE | RATINGS: INDUCTANCE @ CURRENT (1000 uH) | REPLACEMENT DATA: AUTOMATIC PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| L1 | .190A | 26Ω | .8 Henry | NE-685 | C-2328 | C-2996 ① | TR-3300 ① | ① Drill one new mounting hole. |

# PARTS LIST AND DESCRIPTIONS (Continued)

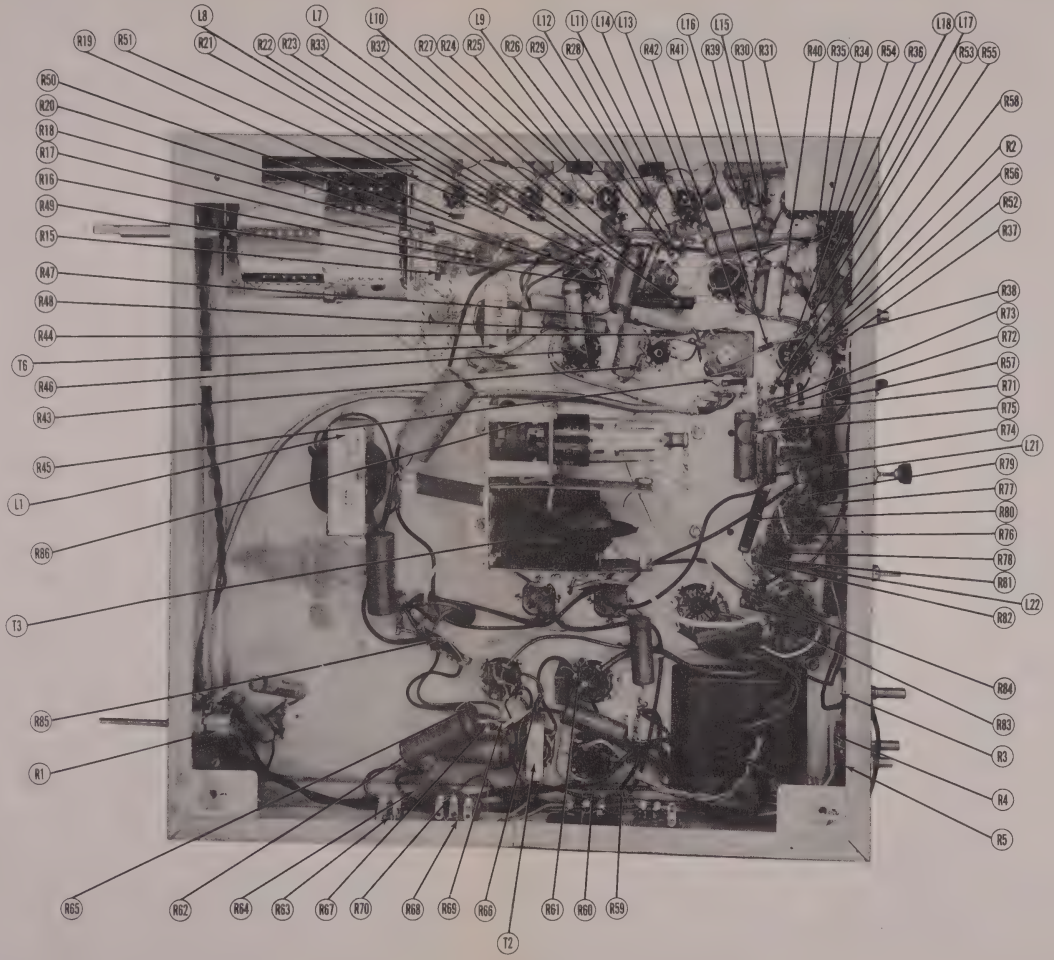
## COILS (RF-IF)

| ITEM No. | USE | DC RES. | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|---|
| | | PRI. | SEC. | AUTOMATIC PART No. | MEISSNER PART No. | |
| L2 | Ant. Coil | 0Ω | 0Ω | | | |
| L3 | RF, Mixer Grid and Osc. Coils | 0Ω | | | | |
| L4 | Fil. Choke | 0Ω | | | | |
| L5 | Fil. Choke | 0Ω | | | | |
| L6 | 1st Video IF | 1Ω | | IF21 | | |
| L7 | Fil. Choke | 0Ω | | | | |
| L8 | 2nd Video IF | .2Ω | | IF 22 | | |
| L9 | Fil. Choke | 0Ω | | | | |
| L10 | 3rd Video IF | .2Ω | .2Ω | IF 23 | | |
| L11 | Fil. Choke | 0Ω | | | | |
| L12 | 4th Video IF | .3Ω | .1Ω | IF 24 | | |
| L13 | Peaking | 8.5Ω | | | 19-1921 ① | 160 Microhenries (Pink Dot) Wound on 15KΩ Resistor |
| L14 | Peaking | 20Ω | | | | 700 Microhenries (Black Dot) |
| L15 | Peaking | 8.1Ω | | | 19-1921 ② | 160 Microhenries (Blue Dot) Wound on 11KΩ Resistor |
| L16 | Peaking | 13Ω | | | 19-1922 | 290 Microhenries (White Dot) |
| L17 | Peaking | 10Ω | | | 19-1922 ③ | 230 Microhenries (Red Dot) Wound on 33KΩ Resistor |
| L18 | Peaking | 11Ω | | | 19-1922 | 235 Microhenries (Orange Dot) |
| L19 | Sound IF | 1.6Ω | 1.7Ω | ST-10 | | |
| L20A | Ratio Det. Trans. | 6.5Ω | .6Ω | RD-7B | | |
| B | Ratio Det. Trans. | | | RD-416 | | |
| L21 | Horiz. Hold Coil | 110Ω | | 0-10 | | |
| L22 | Horiz. Lin. | 30Ω | | HL-10 | | |

① Parallel with 15KΩ resistor.
② Parallel with 11KΩ resistor.
③ Parallel with 33KΩ resistor.

## MISCELLANEOUS

| ITEM No. | PART NAME | AUTOMATIC PART No. | NOTES |
|---|---|---|---|
| M1 | RF Tuner | TV-278 | |
| M2 | Focus Magnet | | |
| M3 | Ion Trap | | |




CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

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MODEL C172

BENDIX
MODELS C172, C200

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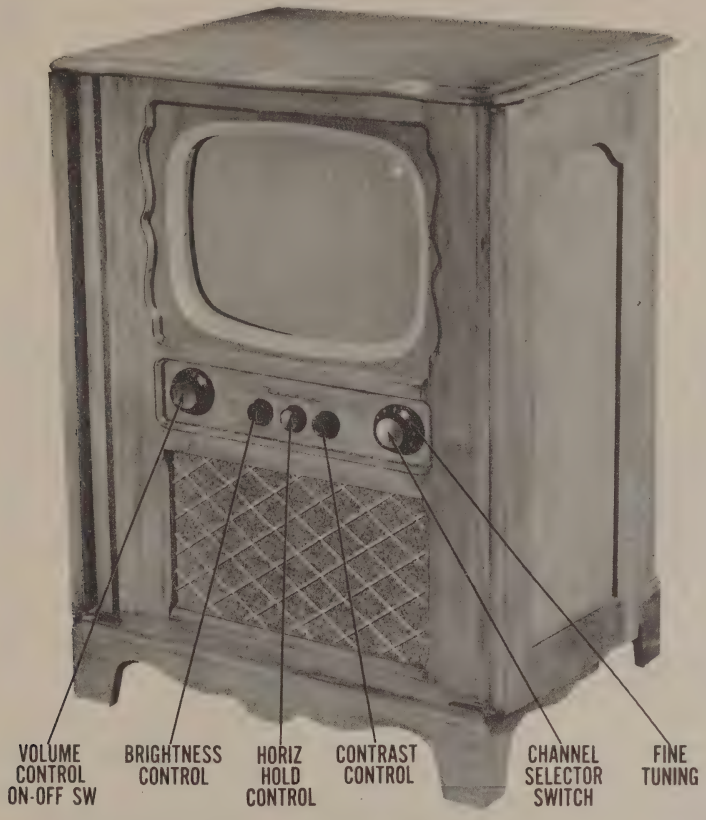


BENDIX MODEL C172

| | |
|---|---|
| TRADE NAME | Bendix, Models C172, C200 |
| MANUFACTURER | Bendix Radio, Div. Of Bendix Aviation Corp., Baltimore, Md. |
| TYPE SET | Television Receiver |
| TUBES | Twenty Two |
| POWER SUPPLY | 110-120 Volts AC - 60 Cycle |
| RATING | 2 Amp. @ 117 Volts AC |
| TUNING RANGE– | Channel 2 thru 13 |

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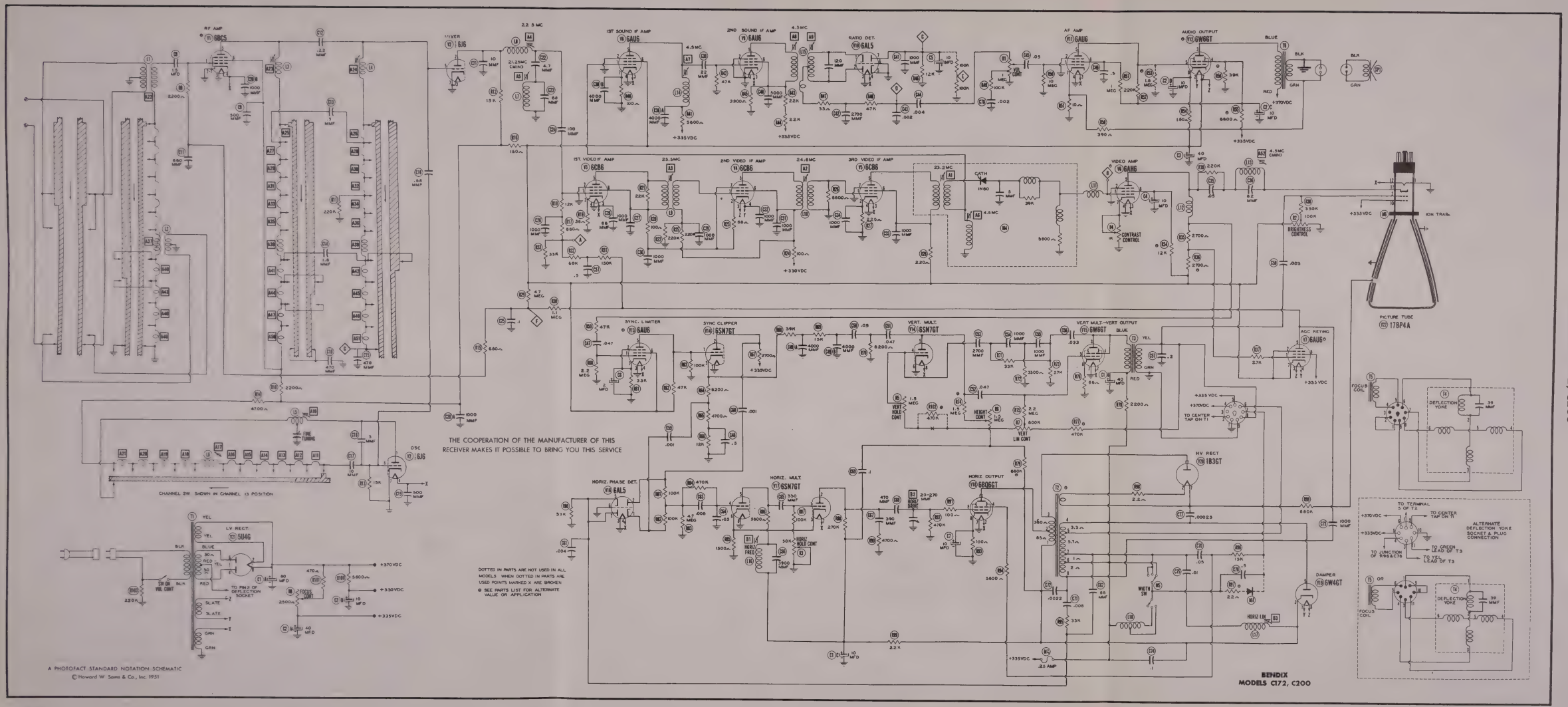


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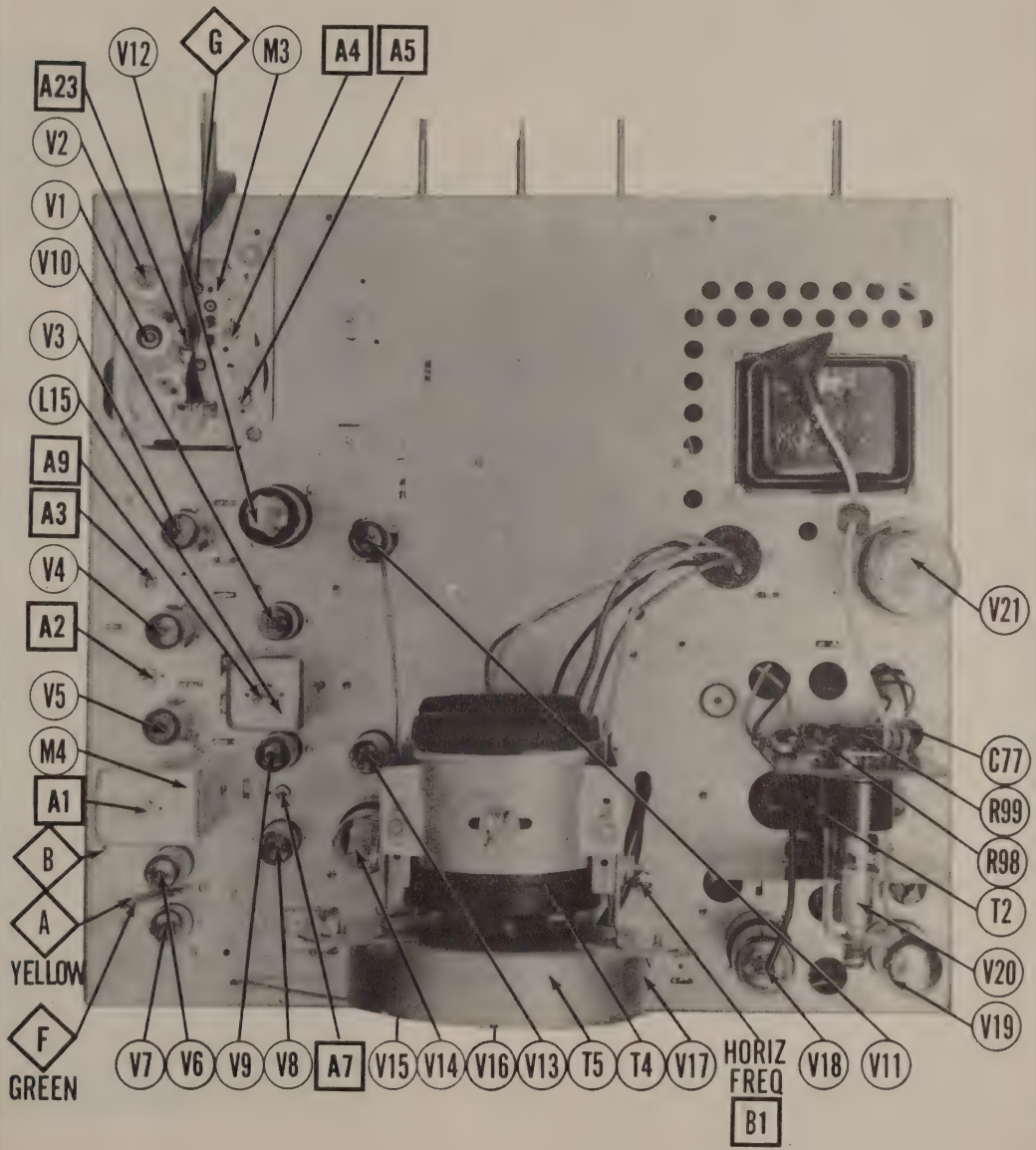
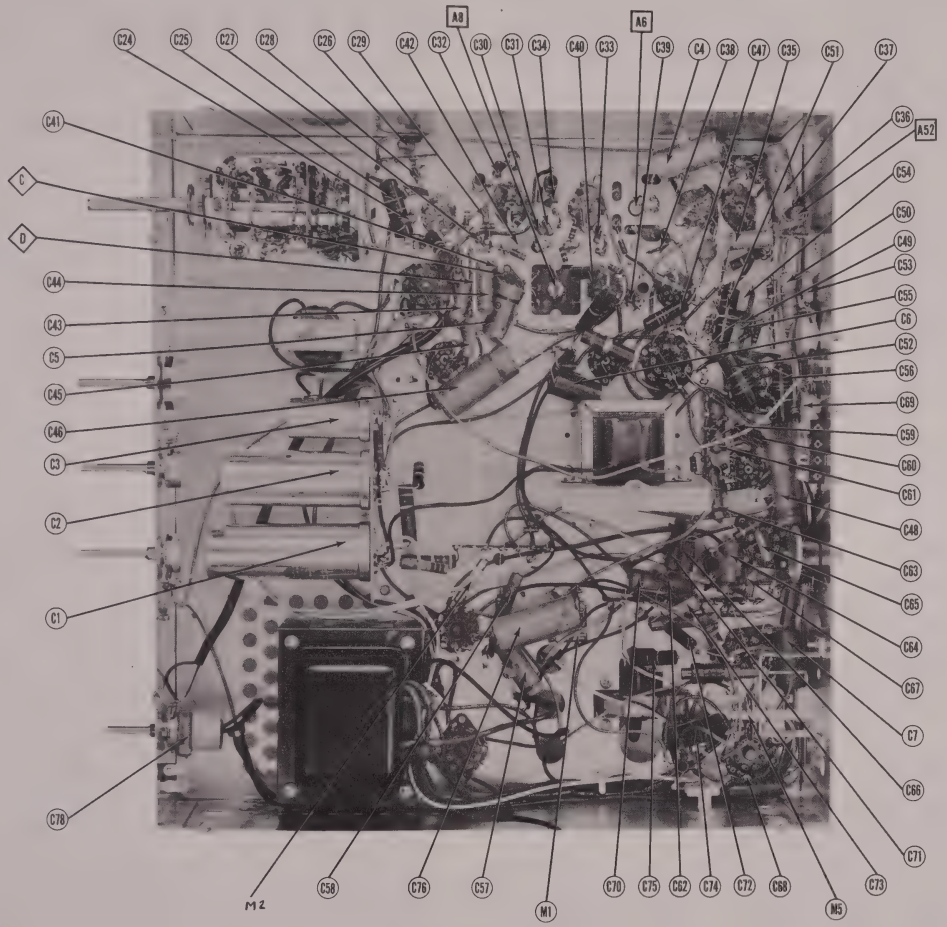
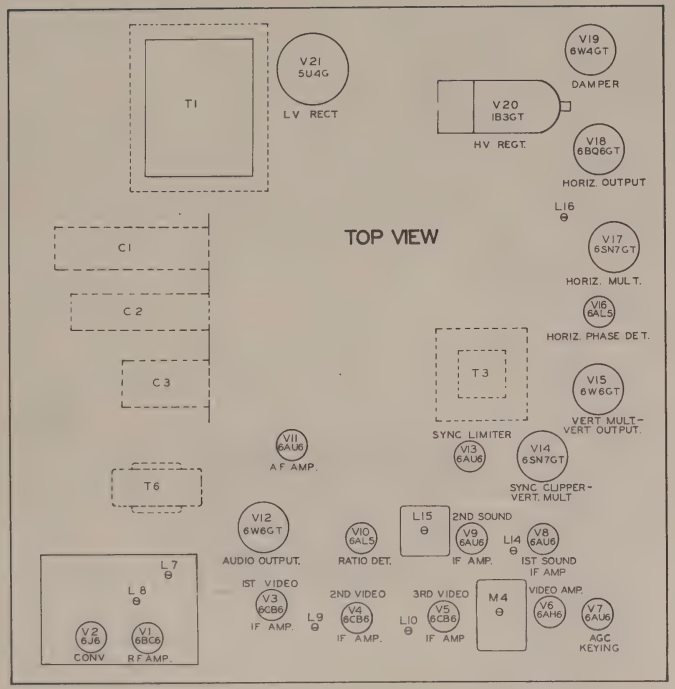
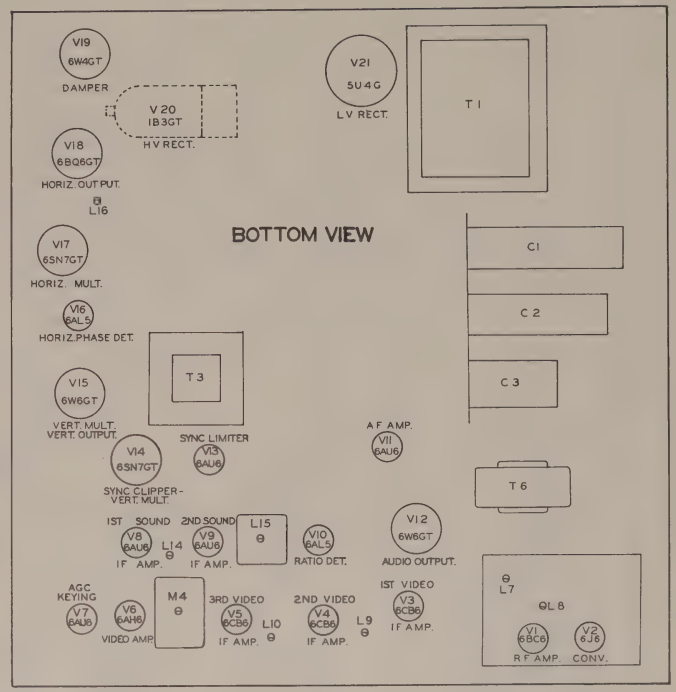



CHASSIS TOP VIEW




CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION




# TUBE PLACEMENT CHART

# ALIGNMENT INSTRUCTIONS

## ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator to disable the high voltage.

Remove the AGC tube, (V7), during alignment.

## VIDEO IF ALIGNMENT

Remove the converter tube, (V2), and replace it with a 6J6 which has Pin 1 removed, this will disable the local oscillator and prevent the possibility of erroneous indications.

Connect the negative lead of a 3 volt battery to Point A.

Connect the positive lead to chassis.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 1. | Direct | High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis. | 23.2MC (Unmod.) | Any | DC probe to Point (B). Common to chassis. | A1 | Adjust for maximum deflection. Attenuate signal generator to maintain 2 volt reading. |
| 2. | " | " | 24.6MC | " | " | A2 | " |
| 3. | " | " | 25.5MC | " | " | A3 | " |
| 4. | " | " | 22.5MC | " | " | A4 | " |
| 5. | " | " | 21.25MC | " | " | A5 | Adjust for MINIMUM deflection. |

## OVERALL VIDEO IF RESPONSE CHECK

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 6. | Direct | High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis. | 24MC (10MC SWP) | 21.25MC<br>22.25MC<br>25.75MC | Any | Vert. amp. to Point (B). Low side to chassis. | | Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response. |

## SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

Connect the two matched 100KΩ (±1%) resistors in series from Point C to chassis. The junction of these two resistors is alignment Point E as shown on the schematic.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 7. | .005MFD | High side to Point (A). Low side to chassis. | 4.5MC (Unmod.) | Any | DC probe to Point (C). Common to chassis. | A6, A7, A8 | Adjust for maximum deflection. |
| 8. | " | " | " | " | DC probe to Point (D). Common to Point (E). | A9 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. |

## SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 7. | .005MFD | High side to Point (A). Low side to chassis. | 4.5MC (450KC SWP) | 4.5MC | Any | Vert. amp. to Point (C). Low side to chassis. | A6, A7, A8 | Disconnect stabilizer capacitor C5. Adjust for maximum amplitude and symmetry as per figure 2. |
| 8. | " | " | " | " | " | Vert. amp. to Point (D). Low side to chassis. | A9 | Reconnect capacitor C5. Adjust A9 so 4.5MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines. |

## OSCILLATOR ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.

The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

Set the fine tuning control to the mid-position of its range.

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 9. | Two 120Ω carbon resistors | Across antenna terminals with 120Ω in each lead. | 213MC (10MC SWP) | 211.25MC<br>215.75MC | 13 | Vert. amp. thru 10KΩ to Point (B). Low side to chassis. | A10 | Adjust to place the video marker at 50% response as shown in figure 4. |
| 10. | " | " | 207MC (10MC SWP) | 205.25MC<br>209.75MC | 12 | " | A11 | Check to see if the video marker can be properly placed with in 1/8 rotation of the fine tuning control. If not expand or compress the approximate coil to place the video marker at 50% response, (Except channel 6 coil which has a slug). |
| | | | 201MC (10MC SWP) | 199.25MC<br>203.75MC | 11 | | A12 | |
| | | | 195MC (10MC SWP) | 193.25MC<br>197.75MC | 10 | | A13 | |
| | | | 189MC (10MC SWP) | 187.25MC<br>191.75MC | 9 | | A14 | |
| | | | 183MC (10MC SWP) | 181.25MC<br>185.75MC | 8 | | A15 | |
| | | | 177MC (10MC SWP) | 175.25MC<br>179.75MC | 7 | | A16 | |
| | | | 85MC (10MC SWP) | 83.25MC<br>87.75MC | 6 | | A17 | |
| | | | 79MC (10MC SWP) | 77.25MC<br>81.75MC | 5 | | A18 | |
| | | | 69MC (10MC SWP) | 67.25MC<br>71.75MC | 4 | | A19 | |
| | | | 63MC (10MC SWP) | 61.25MC<br>65.75MC | 3 | | A20 | |
| | | | 57MC (10MC SWP) | 55.25MC<br>59.75MC | 2 | | A21 | |

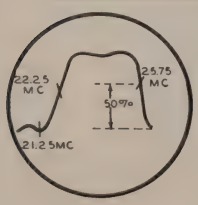


FIG. 1

FIG. 2

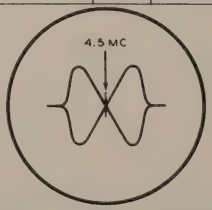


FIG. 3

FIG. 4

# ALIGNMENT INSTRUCTIONS (CONT.)

RF ALIGNMENT

The RF portion of this tuner is normally very stable. Alignment of this portion should not be attempted unless it is definitely known to be out of alignment.
Connect the negative lead of a 3 volt battery to Point (F), connect the positive lead to chassis.
The sweep generator output lead should be terminated with its characteristic impedance, usually 50 ohms.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 11. | Two 120Ω carbon resistors | Across antenna terminals with 120Ω in each lead. | 213MC (10MC SWP) | 211.25MC 215.75MC | 13 | Vert. amp. thru 10KΩ to Point (G). Low side to chassis. | A22, A23, A24 | Adjust for response curve similar to figure 5 after cover is replaced. |
| 12. | " | " | 207MC (10MC SWP) | 205.25MC 209.75MC | 12 | " | A25, A26 | Expand or compress coil turns for response curve similar to figure 5 after cover is replaced. |
| 13. | " | " | 201MC (10MC SWP) | 199.25MC 203.75MC | 11 | " | A27, A28 | " |
| 14. | " | " | 195MC (10MC SWP) | 193.25MC 197.75MC | 10 | " | A29, A30 | " |
| 15. | " | " | 189MC (10MC SWP) | 187.25MC 191.75MC | 9 | " | A31, A32 | " |
| 16. | " | " | 183MC (10MC SWP) | 181.25MC 185.75MC | 8 | " | A33, A34 | " |
| 17. | " | " | 177MC (10MC SWP) | 175.25MC 179.75MC | 7 | " | A35, A36 | " |
| 18. | " | " | 85MC (10MC SWP) | 83.25MC 87.75MC | 6 | " | A37, A38, A39 | |
| 19. | " | " | 79MC 10MC SWP) | 77.25MC 81.75MC | 5 | " | A40, A41, A42 | " |
| 20. | " | " | 69MC (10MC SWP) | 67.25MC 71.75MC | 4 | " | A43, A44, A45 | " |
| 21. | " | " | 63MC (10MC SWP) | 61.25MC 65.75MC | 3 | " | A46, A47, A48 | " |
| 22. | " | " | 57MC (10MC SWP) | 55.25MC 59.75MC | 2 | " | A49, A50, A51 | " |

4.5MC TRAP ADJUSTMENT

After alignment is completed and set returned to normal operation, connect an antenna and tune in a strong TV station. If evidence of 4.5MC beat interference is present, adjust the 4.5MC trap, (A52), to eliminate or minimize the interference.

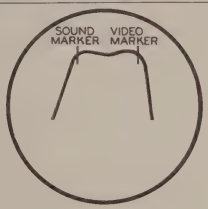



FIG.5

# VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6BC5 | -.5VDC | 0V | 0V | 6.3VAC | 100VDC | 100VDC | 0V | | |
| V 2 | 6J6 | 75VDC | 90VDC | 0V | 6.3VAC | -.6VDC | §-4.5VDC | 0V | | |
| V 3 | 6CB6 | -2VDC | .4VDC | 6.3VAC | 0V | 160VDC | 160VDC | 0V | | |
| V 4 | 6CB6 | 150VDC | 165VDC | ▲0V | ▲6.3VAC | 320VDC | 320VDC | 160VDC | | |
| V 5 | 6CB6 | 0V | 2.4VDC | 6.3VAC | 0V | 140VDC | 140VDC | 0V | | |
| V 6 | 6AH6 | -.2VDC | 0V | 6.3VAC | 0V | 130VDC | 135VDC | 2.6VDC | | |
| V 7 | 6AU6 | ▲-5.2VDC | ▲0V | ▲0V | ▲6.3VAC | ▲-160VDC | ▲190VDC | ▲0V | | |
| V 8 | 6AU6 | 0V | 0V | 6.3VAC | 0V | 300VDC | 145VDC | 1VDC | | |
| V 9 | 6AU6 | -1.2VDC | 0V | 6.3VAC | 0V | 25VDC | 25VDC | 0V | | |
| V 10 | 6AL5 | -.4VDC | -.4VDC | 0V | 6.3VAC | 0V | 0V | -1.4VDC | | |
| V 11 | 6AU6 | -.6VDC | 0V | 6.3VAC | 0V | 135VDC | 35VDC | 0V | | |
| V 12 | 6W6GT | 0V | ▲6.3VAC | ▲205VDC | ▲125VDC | ▲-3.3VDC | 0V | ▲0V | ▲ 7.8VDC | |
| V 13 | 6AU6 | -.1VDC | 5VDC | 0V | 6.3VAC | 95VDC | 145VDC | 5VDC | | |
| V 14 | 6SN7GT | 95VDC | 320VDC | 105VDC | -30VDC<br>-120VDC | 145VDC<br>50VDC | 0V | 0V | 6.3VAC | |
| V 15 | 6W6GT | -.2VDC | 6.3VAC | 300VDC<br>200VDC | 300VDC<br>200VDC | -3.8VDC<br>-9.7VDC | 55VDC | 0V | 3.2VDC<br>1VDC | |
| V 16 | 6AL5 | 5VDC | -5VDC | 0V | 6.3VAC | 0V | 0V | 0V | | |
| V 17 | 6SN7GT | -8.2VDC | 140VDC | 14VDC | .2VDC | 320VDC | 14VDC | 6.3VAC | 0V | |
| V 18 | 6BQ6GT | 12VDC | 6.3VAC | 0V | 155VDC | -11VDC | -11VDC | 0V | 12VDC | TOP CAP<br>* |
| V 19 | 6W4GT | 390VDC | 145VDC | 570VDC | 0V | 335VDC | 0V | ▲6.3VAC | ▲0V | |
| V 20 | 1B3GT | * DO NOT MEASURE | | | | | | | | |
| V 21 | 5U4G | 0V | 370VDC | 0V | 360VAC | 0V | 360VAC | 0V | 370VDC | |
| V 22 | 17BP4A | 0V | 0V | PIN 10<br>335VDC | PIN 11<br>125VDC | PIN 12<br>6.3VAC | | | | |

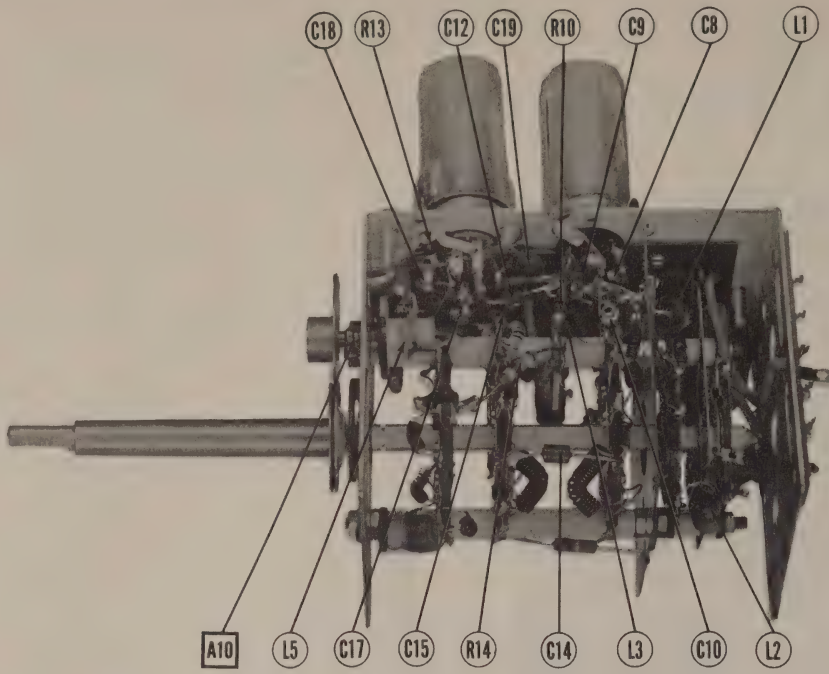
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
FOCUS CONTROL COUNTER CLOCKWISE
§ TAKEN WITH VACUUM TUBE VOLTMETER
▲ MEASURED FROM JUNCTION OF R54 AND C3
* DO NOT MEASURE

RESISTANCE READINGS

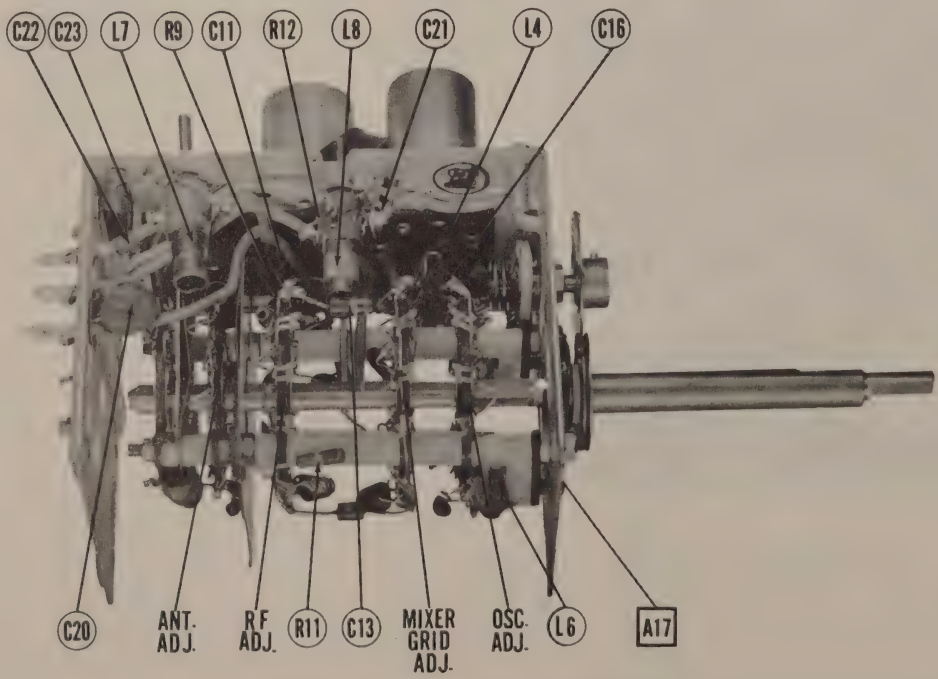
| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6BC5 | 1.2Meg | 0Ω | 0Ω | .1Ω | ▲2.3KΩ | ▲2.3KΩ | 0Ω | | |
| V 2 | 6J6 | ▲4.8KΩ | ▲15KΩ | 0Ω | .1Ω | 225KΩ | 15KΩ | 0Ω | | |
| V 3 | 6CB6 | 45KΩ | 56Ω | .1Ω | 0Ω | Inf. | Inf. | 0Ω | | |
| V 4 | 6CB6 | 130KΩ | Inf. | ▲0Ω | ▲.1Ω | †5.7KΩ | †5.7KΩ | Inf. | | |
| V 5 | 6CB6 | .2Ω | 220Ω | .1Ω | 0Ω | ▲220Ω | ▲220Ω | 0Ω | | |
| V 6 | 6AH6 | 5.6KΩ | 0Ω | .1Ω | 0Ω | ▲5.4KΩ | ▲12KΩ | 1.2KΩ | | |
| V 7 | 6AU6 | ▲30KΩ | ▲0Ω | ▲0Ω | ▲.1Ω | 250KΩ | †220Ω | ▲0Ω | | |
| V 8 | 6AU6 | .3Ω | 0Ω | .1Ω | 0Ω | †5.8KΩ | ▲0Ω | 100Ω | | |
| V 9 | 6AU6 | 47KΩ | 0Ω | .1Ω | 0Ω | †20KΩ | †20KΩ | 0Ω | | |
| V 10 | 6AL5 | Inf. | Inf. | 0Ω | .1Ω | 0Ω | 0Ω | 12KΩ | | |
| V 11 | 6AU6 | 10Meg | 0Ω | .1Ω | 0Ω | †230KΩ | †1Meg | 10Ω | | |
| V 12 | 6W6GT | .5Ω | ▲.1Ω | †480Ω | †7KΩ | †230KΩ | Inf. | ▲0Ω | ▲150Ω | |
| V 13 | 6AU6 | 2.2Meg | 33KΩ | 0Ω | .1Ω | ▲30KΩ | ▲0Ω | 33KΩ | | |
| V 14 | 6SN7GT | ▲30KΩ | †3KΩ | 25KΩ | 1Meg<br>2.5Meg | #2.2Meg<br>#3.7Meg | 0Ω | 0Ω | .1Ω | |
| V 15 | 6W6GT | 27KΩ | .1Ω | †3.3KΩ | †3.3KΩ | 2.7Meg<br>3.3Meg | 12KΩ | 0Ω | 68Ω | |
| V 16 | 6AL5 | 4.8Meg | 4.8Meg | 0Ω | .1Ω | 33KΩ | 0Ω | 33KΩ | | |
| V 17 | 6SN7GT | 150KΩ | #290KΩ | 1.5KΩ | 5.2Meg | #28KΩ | 1.5KΩ | .1Ω | 0Ω | |
| V 18 | 6BQ6GT | 100Ω | .1Ω | Inf. | †20KΩ | 470KΩ | 470KΩ | 0Ω | 100Ω | TOP CAP<br>#85Ω |
| V 19 | 6W4GT | #22KΩ | #300KΩ | 500KΩ | Inf. | †225Ω | Inf. | ▲.1Ω | ▲0Ω | |
| V 20 | 1B3GT | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | TOP CAP<br>#465Ω |
| V 21 | 5U4G | Inf. | 20KΩ | Inf. | 30Ω | Inf. | 30Ω | Inf. | 20KΩ | |
| V 22 | 17BP4A | 0Ω | 330KΩ | PIN 10<br>†220Ω | PIN 11<br>▲225KΩ | PIN 12<br>.1Ω | | | | |

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
FOCUS CONTROL COUNTER CLOCKWISE
▲ MEASURED FROM JUNCTION OF R54 AND C3
† MEASURED FROM PIN 8 OF V21
# MEASURED FROM PIN 3 OF V19

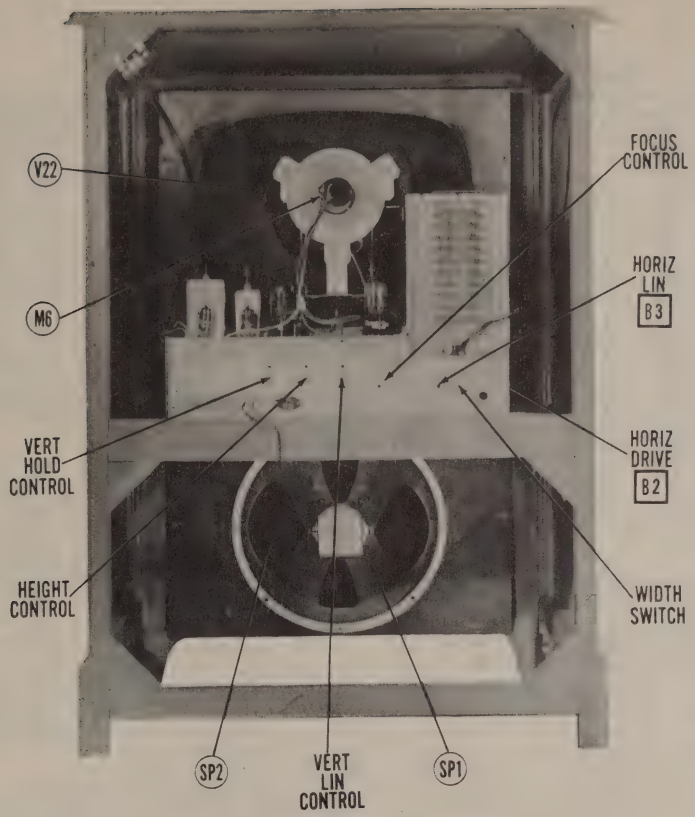
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.




RF TUNER-RIGHT SIDE




RF TUNER-LEFT SIDE




## CABINET-REAR VIEW

## HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal frequency slug, (B1), until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer, (B2), counter-clockwise as far as possible without crowding the right half of the picture.

Turn the width switch to the position where the picture fills the mask horizontally.

Adjust the horizontal linearity slug, (B3), until the picture is symmetrical from left to right.

Alternate adjustment of B2 and B3 may be required to obtain proper width with best horizontal linearity.

## DISASSEMBLY INSTRUCTIONS

1. Remove six push-on type control knobs.
2. Remove seven wood screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Remove antenna terminal strip.
5. Disconnect speaker.
6. Remove seven hex head bolts from chassis. Remove chassis.
7. Remove four hex nuts from speaker. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.

# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA: BENDIX-PART No. | STANDARD REPLACEMENT | RMA BASE TYPE | NOTES |
|---|---|---|---|---|---|
| V1A | RF Amplifier | 6BC5 | 6BC5 | TBD | |
| B | RF Amplifier | 6CB6 | 6CB6 | 6CK | |
| C | RF Amplifier | 6AG5 | 6AG5 | TBD | |
| V2 | Converter | 6J6 | 6J6 | TBF | |
| V3 | 1st Video IF Amp. | 6CB6 | 6CB6 | 6CK | |
| V4 | 2nd Video IF Amp. | 6CB6 | 6CB6 | 6CK | |
| V5 | 3rd Video IF Amp. | 6CB6 | 6CB6 | 6CK | |
| V6A | Video Amplifier | 6AH6 | 6AH6 | TBK | |
| B | Video Amplifier | 6AC7 | 6AC7 | 8N | |
| V7A | AGC Keying | 6AU6 | 6AU6 | TBK | |
| B | AGC Keying | 6AG5 | 6AG5 | TBD | |
| V8 | 1st Sound IF Amp. | 6AU6 | 6AU6 | TBK | |
| V9 | 2nd Sound IF Amp. | 6AU6 | 6AU6 | TBK | |
| V10 | Ratio Detector | 6AL5 | 6AL5 | 6BT | |
| V11 | A/F Amplifier | 6AU6 | 6AU6 | TBK | |
| V12A | Audio Output | 6W6GT | 6W6GT | 7S | |
| B | Audio Output | 6V6GT | 6V6GT | 7AC | |
| V13A | Sync. Limiter | 6AU6 | 6AU6 | TBK | |
| B | Sync. Limiter | 6AG5 | 6AG5 | TBD | |
| V14 | Sync. Clipper - Vert. Mult. - Vert. Output | 6SN7GT | 6SN7GT | 8BD | |
| | | 6W6GT | 6W6GT | 7S | |
| V16 | Horiz. Phase Det. | 6AL5 | 6AL5 | 6BT | |
| V17 | Horiz. Mult. | 6SN7GT | 6SN7GT | 8BD | |
| V18 | Horiz. Output | 6BQ6GT | 6BQ6GT | 8AM | |
| V19 | Damper | 6W4GT | 6W4GT | 4CG | |
| V20 | HV Rectifier | 1B3GT | 1B3GT | 2C | |
| V21 | LV Rectifier | 5U4G | 5U4G | 5T | |
| V22 | Picture Tube | 17BP4A | 17BP4A | 12D | |

## CAPACITORS

**Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING: CAP. | VOLT | BENDIX PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C1A | 30 | 450 | CE3A07 | APH1622 | | UPT84245 | | TVL-3743 | a Filter |
| B | 40 | 450 | | | | | | | a Vert. Output Dec. |
| C | 10 | 450 | | | | | | | a Decoupling |
| C2A | 40 | 450 | CE4A04 | AFH8422J | | UP41145 | | TVL-4840 | a Filter |
| B | 40 | 450 | | | | | | | a Filter |
| C | 150 | 450 | | | | | | | a Decoupling |
| D | 10 | 200 | | | | | | | Output Cathode Decoupling |
| C3 | 40 | 200 | CE1A00 | AFH8 | | UP4025 | | TVL-1519 | Decoupling |
| C4 | 10 | 200 | | PR2250/13 | | BR1225A | | TVA-1504 | V. Amp. Screen |
| C5 | 10 | 50 | CE1T10 | PR550/10 | | BR105 | | TVA-1304 | Stabilizing Cap |
| C6 | 2 | 50 | CE1T01 | PR1550/4 | | BBR2-50T | | TVA-1101 | Sync. Sep. Cathode |
| C7 | 10 | 50 | CE1T10 | PR550/10 | | BR105 | | TVA-1304 | Horiz. Output Cathode |
| C8 | 15 | | | SL5 | D6-150 | | GP1K-15 | 19C33 | RF Coupling |
| C9 | 500 | | | SI500 | D6-501 | | GP2K-500 | 19C32 | RF Amp. Dec. |
| C10 | 470 | | | SI470 | D6-471 | | GP2K-470 | 19C15 | RF Amp. Dec. |
| C11 | 680 | | | SI680 | D6-681 | | GP2K-680 | 19C17 | AGC Filter |
| C12 | .22 | | | | | | | | RF Coupling |
| C13 | .5 | | | | TCZ-.5 | | | | RF Coupling |
| C14 | 1.8 | | | | | | | | RF Coupling |
| C15 | 470 | | | SI470 | D6-471 | | GP2K-470 | 19C15 | RF Coupling |
| C16 | 68 | | | | TCZ-.68 | | | | Conv. Grid Filter |
| C17 | 10 | | | SU10NPO | TCZ-10 | | | | Osc. Coupling |
| C18 | 3 | | | | | | NP0K-10 | 19C3 | Osc. Grid Cap |
| C19 | 500 | | | SI500 | D6-501 | | NP0K-3 | | Osc. Feedback |
| C20A | 1000 | | | BPD-2X001 | DD-2-102 | | GP2K-500 | 19C32 | Decoupling |
| B | 1000 | | | | | | 813-2X001 | 19C7 | RF Bypass |
| C21 | 10 | | | SU10NPO | TCZ-10 | | NP0K-10 | 19C3 | Filament Bypass |
| C22 | 4.7 | | | SI4.7NPO | TCZ-4.7 | | NP0K-4.7 | | Fixed Trimmer |
| C23 | 68 | 500 | | | | | | | IF Coupling |
| C24 | 100 | | | SI100 | D6-101 | 5WST1 | GP1K-100 | 19C11 | AGC Filter |
| C25 | .1 | 600 | | P488-1 | DF-104 | PTE42P1 | | 4TM-P1 | AGC Filter |
| C26 | 1000 | | CC9M50 | SD1000 | D6-102 | 1WSD1 | GP2L-001 | 19C1 | AGC Filter |
| C27 | 1000 | | CC9M50 | SD1000 | D6-102 | 1WSD1 | GP2L-001 | 19C1 | 1st V. IF Dec. |
| C28 | 68 | | CC1E68 | SI68 | D6-680 | 5WSQ7 | GP1K-68 | 19C10 | 1st V. IF Fil. |
| C29 | 1000 | | CC9M50 | SD1000 | D6-102 | 1WSD1 | GP2L-001 | 19C1 | Bias Filter |
| C30 | 1000 | | CC9M50 | SD1000 | D6-102 | 1WSD1 | GP2L-001 | 19C1 | Decoupling |
| C31 | 1000 | | CC9M50 | SD1000 | D6-102 | 1WSD1 | GP2L-001 | 19C1 | 2nd V. IF Dec. |
| C32 | 1000 | | CC9M50 | SD1000 | D6-102 | 1WSD1 | GP2L-001 | 19C1 | 2nd V. IF Fil. |
| C33 | 1000 | | CC9M50 | SD1000 | D6-102 | 1WSD1 | GP2L-001 | 19C1 | 3rd V. IF Dec. |
| C34 | 1000 | | CC9M50 | SD1000 | D6-102 | 1WSD1 | GP2L-001 | 19C1 | 3rd V. IF Cathode |
| C35 | .05 | 200 | TF1A5-05 | PT88-05 | DF-503 | PTE42S | | 2TM-S5 | Video Coupling |
| C36 | 82 | | | | | | N33K-82 | | Fixed Trimmer |
| C37 | 100 | 100 | CP1T00 | P288-3 | | | | 2TM-P5 | AGC Filter |
| C38A | 4000 | | CE2T05 | BPD-2X004 | DD-2-502 | 1WSD4 | 823-2X004 | 38C2 | 1st S. IF Plate Dec. |
| B | 4000 | | | | | 1WSD4 | | | 1st S. IF Cathode |
| C39 | 22 | | CK5A25 | SI22 | D6-220 | 5WSQ25 | GP1K-22 | 19C23 | IF Coupling |
| C40 | 5000 | | CC0M00 | BPD-005 | DD-502 | 1DSD5 | 811-005 | 19C1 | 2nd S. IF Dec. |
| C41 | 1000 | | CC9M50 | SD1000 | D6-102 | 1WSD1 | GP2L-001 | 19C1 | RF Bypass |
| C42 | 2700 | | CP3M30 | SI2700 | D6-272 | 1WSD25 | GP2M-0027 | 1FM-225 | Diode Load Cap |
| C43 | 002 | MF | CP2T02 | P568-002 | D6-202 | PTE6D2 | GP2M-002 | 6TM-D2 | De-emphasis |
| C44 | 004 | Mica | CM5T04 | P568-004 | D6-402 | PTE6D4 | GP2M-004 | 6TM-D4 | Audio Coupling |
| C45 | 05 | 200 | CP2A45 | P288-05 | DF-503 | PTE42S | | 2TM-S5 | Audio Coupling |
| C46 | 5 | 400 | CP4T57 | 484-5 | | GT4P5 | | 4TM-P5 | A/F Amp. Screen |
| C47 | .047 | 200 | CP5T56 | P288-047 | DF-504 | PTE42S | | 2TM-S47 | Sync. Coupling |
| C48 | .05 | 100 | CP1T0C | P288-5 | | GT2P5 | | 2TM-P5 | Sync. Clipper Cath. |
| C49A | 4000 | | CE1T05 | BPD-2X004 | DD-2-502 | 1DSD4 | 823-2X004 | 38C2 | Integrator Net |
| B | 4000 | | | | | 1DSD4 | | | Integrator Net |
| C50 | .02 | 500 | CP2T40 | P288-02 | DF-503 | PTE42S | | 2TM-S5 | Vert. Sync. Coupling |
| C51 | .047 | 500 | CP5T39 | P568-047 | DF-503 | PTE6S5 | | 6TM-S47 | Vert. Sync. Coupling |
| C52 | .047 | 500 | CP9T39 | P568-047 | DF-503 | PTE6S5 | | 6TM-S47 | Vert. MV Feedback |
| C53 | .0027 | 500 | CM5A42T2S | 1467-002 | DF-502 | 1WSD25 | GP2M-0027 | 1FM-225 | Vert. MV Feedback |
| C54 | 1000 | 500 | CM5A10ZE | 1A91-102 | DF-102 | 1WSD1 | GP2L-001 | 1FM-31 | 1SKC Filter Network |
| C55 | 1000 | 500 | CM2A10ZK | 1467-001 | DF-102 | 1WSD1 | GP2L-001 | 1FM-31 | 1SKC Filter Network |
| C56 | .033 | 600 | CP9T37 | P568-033 | | PTE6S3 | | 6TM-S33 | Vert. MV Feedback |

## CAPACITORS (CONT.)

| ITEM No. | RATING: CAP. | VOLT | BENDIX PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C57 | .2 | 200 | CP2T56 | P488-22 | | | GT4P2 | 2TM-P22 | Fixed Trimmer |
| C58 | .003 | 600 | CP3T74 | P568-003 | D6-302 | PTE6D3 | GP3M-003 | 6TM-D3 | Vert. Sweep Coupling |
| C59 | .001 | 400 | CP3S10 | P588-001 | D6-102 | PTE6D1 | GP3L-001 | 6TM-D1 | Horiz. Sync. Coupling |
| C60 | .001 | 400 | CP3S10 | P588-001 | D6-102 | PTE6D1 | GP3L-001 | 6TM-D1 | Horiz. Sync. Coupling |
| C61 | .004 | 600 | CP3T74 | P568-004 | D6-402 | PTE6D4 | GP3M-004 | 6TM-D4 | Integrator Network |
| C62 | 68 | | CC6B32 | SI68 | D6-680 | 5WSQ7 | GP1K-68 | 19C10 | Horiz. Feedback |
| C63 | .006 | 600 | CP3T20 | P568-006 | D6-502 | PTE6D5 | | 6TM-D5 | AFC Filter |
| C64 | .05 | 200 | CP2T40 | P288-06 | DF-503 | PTE42S | | 2TM-S5 | AFC Filter |
| C65 | 330 | 500 | CM2A33ZM | SI330 | D6-331 | 5WST3 | GP2K-330 | 19C14 | Horiz. MV Feedback |
| C66 | 1500 | 500 | CM3A253K | 1464-004 | | 1DSD24 | | MS-24 | Fixed Trimmer |
| C67 | 390 | 500 | CC2A39ZM | 1469-0004 | D6-391 | 5RST4 | GP2K-390 | MS-34 | Horiz. Discharge |
| C68 | 470 | | CC8A41 | SI470 | D6-471 | 5WST5 | GP2K-470 | 19C15 | Horiz. Sweep Coupling |
| C69 | .1 | 200 | CP2T51 | P288-1 | DF-104 | PTE42P1 | | 2TM-P1 | Decoupling |
| C70 | .05 | 400 | CP4T40 | P488-05 | DF-503 | PTE42S | | 4TM-S5 | Horiz. Sweep Coupling |
| C71 | .006 | 600 | CP3T20 | P568-006 | | PTE6D6 | | 6TM-D6 | Horiz. Feedback |
| C72 | .0022 | 1000 | CP0B12 | P1088-0023 | | PTE16D2 | | MB-D22 | Fixed Trimmer |
| C73 | 1000 | 500 | CM2A10ZM | 1467-001 | D6-102 | 1WSD1 | GP2L-001 | 1FM-31 | Horiz. Sweep Coupling |
| C74 | .1 | 600 | CP2T51 | P288-1 | | PTE6P1 | | 6TM-P1 | Damper Filter |
| C75 | .01 | 600 | CP9T31 | P568-01 | | PTE6S1 | | 6TM-S1 | Damper Filter |
| C76 | 15 | 400 | CP4T57 | 484-5 | | GT4P4 | | 4TM-P5 | Horiz. Sweep Coupling |
| C77 | .00025 | 12500 | | | | | | | R.V. Filter |
| C78 | .002 | 600 | CP6T12 | P688-002 | D6-202 | PTE6D2 | GP2M-002 | 6TM-D2 | Tone Comp. |

## CONTROLS

| ITEM No. | RATING: RESISTANCE | WATTS | BENDIX PART No. | IRC PART No. | CLAROSTAT PART No. | CENTRALAB PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| R1A | 1Meg | ½ | RV4S15 | Q19-137X | AT-112 | BT-74-S | Volume Control - Tapped@ 600KΩ |
| B | Shaft | | Not req. | Not req. | FS-3 | Not req. | Attach to R1A Per Instructions |
| C | Switch | | Not req. | 76-1 | SW-A | Not req. | Attach to R1A Per Instructions |
| R2A | 100KΩ | ½ | RV0C15 | Q21-128 | AG-45-S | B-40 | Brightness Control |
| B | Shaft | | Not req. | Not req. | FS-3 | Not req. | Attach to R2A Per Instructions |
| R3A | 5MΩ | ½ | RV0C18 | Q21-123 | AG-44-S | B-31 | Horizontal Hold Control |
| B | Shaft | | Not req. | Not req. | FS-3 | Not req. | Attach to R3A Per Instructions |
| R4A | 1000Ω | 1 | RV0C18 | Q21-108 | AM-8-S | B-5 | Contrast Control |
| B | Shaft | | Not req. | Not req. | FS-3 | Not req. | Attach to R4A Per Instructions |
| R5A | 1.5Meg | ½ | RV4C12 | Q21-138 | AG-83-S | AM-75 | Vertical Hold Control |
| B | Shaft | | Not req. | Not req. | FKS-1/4 | AK-1 | Attach to R5A Per Instructions |
| R6A | 1.5Meg | ½ | RV4C12 | Q21-138 | AG-83-S | AK-75 | Height Control |
| B | Shaft | | Not req. | Not req. | FKS-1/4 | AK-1 | Attach to R6A Per Instructions |
| R7A | 600KΩ | ½ | RV4C11 | | AG-58-S | B-4 | Vertical Linearity Control |
| B | Shaft | | Not req. | | FKS-1/4 | Not req. | Attach to R7A Per Instructions |
| R8 | 2500Ω | 4 | RV0C16 | | RTV-183 | SVP-988 | Focus Control - Wire Wound |

## RESISTORS

| ITEM No. | RATING: RESISTANCE | WATTS | BENDIX PART No. | IRC PART No. | IDENTIFICATION CODES ALL RESISTORS ±10% UNLESS OTHERWISE SPECIFIED |
|---|---|---|---|---|---|
| R9 | 2200Ω | 20% ½ | | BTS-2200 | RF Amp. Grid |
| R10 | 2200Ω | ½ | | BTS-2200 | RF Amp. Decoupling |
| R11 | 220KΩ | 20% ½ | | BTS-220K | Mixer Grid |
| R12 | 15KΩ | 20% ½ | | | Mixer Plate |
| R13 | 15KΩ | 20% ½ | | | Osc. Grid |
| R14 | 4700Ω | ½ | | BTS-4700 | Osc. Plate |
| R15 | 680Ω | 20% ½ | | BTS-680 | AGC Network |
| R16 | 150Ω | 20% ½ | | BTS-150 | Decoupling |
| R17 | 680Ω | 20% ½ | RC22A681M | BTS-680 | AGC Network |
| R18 | 12KΩ | ½ | RC22A123K | | 1st Video IF Amp. Grid |
| R19 | 56Ω | ½ | RC22A560K | | 1st Video IF Amp. Cathode |
| R20 | 100Ω | 20% ½ | RC22A101M | BTS-100 | 1st Video IF Amp. Decoupling |
| R21 | 22KΩ | ½ | RC22A223K | | 2nd Video IF Amp. Grid |
| R22 | 220KΩ | ½ | RC22A224K | | 2nd Video IF Amp. Grid |
| R23 | 68Ω | ½ | RC22A680K | | 2nd Video IF Amp. Cathode |
| R24 | 100Ω | 20% ½ | RC22A101M | BTS-100 | 2nd Video IF Amp. Decoupling |
| R25 | 220KΩ | ½ | RC22A224K | BTS-220K | Voltage Divider |
| R26 | 6800Ω | ½ | RC22A682K | | 3rd Video IF Amp. Grid |
| R27 | 220Ω | 20% ½ | RC22A221M | BTS-220 | 3rd Video IF Amp. Cathode |
| R28 | 220Ω | 20% ½ | RC22A221M | BTS-220 | 3rd Video IF Amp. Decoupling |
| R29 | 4.7Meg | 5% ½ | RC22A475J | BTS-4.7Meg-5% | AGC Network |
| R30 | 1.1Meg | ½ | RC22A115J | BTS- 1Meg | AGC Keying Plate |
| R31 | 150KΩ | ½ | RC22A154K | BTS-150K | AGC Network |
| R32 | 68KΩ | ½ | RC22A683K | BTS-68K | AGC Network |
| R33 | 33KΩ | ½ | RC22A333K | BTS-33K | AGC Network |
| R34 | 12KΩ | ½ | RC22A123K | BTS-12K | Video Amp. Screen - See Note 2 |
| R35 | 2700Ω | 1 | RC24A272K | BTA-2700 | Video Amp. Plate |
| R36 | 2700Ω | 1 | RC24A272K | BTA-2700 | Voltage Divider - See Note 3 |
| R37 | 27KΩ | ½ | RC22A273K | BTS-27K | AGC Keying Grid |
| R38 | 330KΩ | 20% ½ | RC22A334M | BTS-330K | Picture Tube Grid |
| R39 | 330KΩ | 20% ½ | RC22A334M | BTS-220K | Picture Tube Cathode |
| R40 | 100Ω | ½ | RC22A101K | BTS-100 | 1st Sound IF Amp. Cathode |
| R41 | 56KΩ | 1 | RC24A563K | BTA-56K | 1st Sound IF Amp. Plate Decoupling |
| R42 | 47KΩ | ½ | RC22A473K | BTS-47K | 2nd Sound IF Amp. Grid |
| R43 | 22KΩ | ½ | RC22A223K | BTS-22K | 2nd Sound IF Amp. Decoupling |
| R44 | 22KΩ | 2 | RC25A223K | BTB-22K | 2nd Sound IF Amp. Decoupling |
| R45 | 3900Ω | ½ | RC22A392K | BTS-3900 | Voltage Divider |
| R46 | 12KΩ | ½ | RC22A123K | BTS-12K | Ratio Detector Diode Load |
| R47 | 33Ω | ½ | RC22A330K | | Balancing |
| R48 | 47KΩ | ½ | RC22A473K | BTS-47K | De-emphasis |
| R49 | 100KΩ | ½ | RC22A104K | BTS-100K | Tone Compensation |
| R50 | 10Meg | ½ | RC22A106M | BTS-10Meg | A/F Amp. Grid |
| R51 | 10Ω | ½ | RC22A100K | BW-1-10 | A/F Amp. Cathode |
| R52 | 220KΩ | 5% ½ | RC22A224J | BTS-220K-5% | A/F Amp. Plate |
| R53 | 1.5Meg | ½ | RC22A155K | BTS-1.5Meg | Output Grid - See Note 1. |
| R54 | 150Ω | 1 | RC24A151M | BTA-150 | Output Cathode |
| R55 | 6800Ω | 2 | RC25A682K | BTB-6800 | Decoupling - See Note 4 |
| R56 | 39KΩ | ½ | RC22A393K | BTS-39K | Voltage Divider - See Note 1 |
| R57 | 1Meg | ½ | RC22A105K | BTS-1Meg | A/F Amp. Screen |
| R58 | 390Ω | ½ | RC22A391K | BTS-390 | Feedback |

## RESISTORS (CONT.)

| ITEM No. | RATING: RESISTANCE | WATTS | BENDIX PART No. | IRC PART No. | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| R59 | 47KΩ | 20% ½ | RC22A473M | BTS-47K | Isolation |
| R60 | 2.2Meg | 20% ½ | RC22A225M | BTS-2.2Meg | Sync. Sep. Grid |
| R61 | 33KΩ | 20% ½ | RC22A333M | BTS-33K | Sync. Sep. Cathode |
| R62 | 47KΩ | 20% ½ | RC22A473M | BTS-47K | Sync. Sep. Plate |
| R63 | 100KΩ | ½ | RC22A104K | BTS-100K | Sync. Clipper Grid |
| R64 | 820KΩ | ½ | RC22A822K | BTS-820K | Sync. Clipper Cathode |
| R65 | 4700Ω | ½ | RC22A472K | BTS-4700 | Sync. Clipper Cathode |
| R66 | 12KΩ | ½ | RC22A123K | BTS-12K | Sync. Clipper Cathode |
| R67 | 2700Ω | 2 | RC25A272K | BTB-2700 | Sync. Clipper Plate |
| R68 | 39KΩ | ½ | RC22A393K | BTS-39K | Integrator |
| R69 | 15KΩ | 20% ½ | RC22A153M | BTS-15K | Integrator |
| R70 | 8200Ω | ½ | RC22A822K | BTS-8200 | Integrator |
| R71 | 33KΩ | ½ | RC22A333K | BTS-33K | Integrator |
| R72 | 3300Ω | ½ | RC22A332K | BTS-3300 | Integrator |
| R73 | 27KΩ | 5% ½ | RC22A273J | BTS-27K-5% | Integrator |
| R74 | 1.5Meg | ½ | RC22A155K | BTS-1.5Meg | Vert. Multivibrator Plate - See Note 5 |
| R75 | 2.2Meg | 20% ½ | RC22A225M | BTS-2.2Meg | Vert. Output Grid |
| R76 | 68Ω | ½ | RC22A680K | BW-1-68 | Vertical Output Cathode |
| R77 | 470KΩ | ½ | RC22A474K | BTS-470K | Voltage Divider - See Note 6 |
| R78 | 2200Ω | 2 | RC25A222K | BTB-2200 | Vertical Output Decoupling |
| R79 | 680KΩ | 20% ½ | RC25A684M | BTB-680K | Vertical MV Decoupling - See Note 7 |
| R80 | 33KΩ | 20% ½ | RC22A333M | BTS-33K | Horizontal Phase Detector Diode Load |
| R81 | 100KΩ | ½ | RC22A104K | BTS-100K | Horizontal Phase Detector Diode Load |
| R82 | 100KΩ | ½ | RC22A104K | BTS-100K | Horizontal Phase Detector Diode Load |
| R83 | 4.7Meg | 20% ½ | RC22A475M | BTS-4.7Meg | Horizontal Phase Detector Diode Load |
| R84 | 470KΩ | 20% ½ | RC22A474M | BTS-470K | Horizontal A/FC Filter |
| R85 | 1500Ω | 1 | RC24A152K | BTA-1500 | Horizontal MV Cathode |
| R86 | 5600Ω | 1 | RC24A562K | BTA-5600 | Horizontal MV Plate |
| R87 | 100KΩ | 20% ½ | RC22A104M | BTS-100K | Horizontal MV Grid |
| R88 | 270K | ½ | RC22A274K | BTS-270K | Horizontal MV Plate |
| R89 | 22KΩ | 20% 2 | RC25A223M | BTB-22K | Horizontal MV Decoupling |
| R90 | 4700Ω | 20% ½ | RC22A472M | BTS-4700 | Horizontal Peaking |
| R91 | 10KΩ | 20% ½ | RC22A103M | | Parasitic Suppressor |
| R92 | 470KΩ | 20% ½ | RC22A474M | BTS-470K | Horizontal Output Grid |
| R93 | 100Ω | 20% 2 | RC25A101M | BW-2-100 | Horizontal Output Cathode |
| R94 | 5600Ω | 2 | RC25A562K | BTB-5600 | Horizontal Output Screen |
| R95 | 33KΩ | 1 | RC24A333K | BTA-33K | Horizontal Feedback |
| R96 | 15KΩ | 2 | RC25A153K | BTB-15K | Horizontal Output Screen |
| R97 | 22Ω | 1 | RC24A220M | BW-1-22 | Centering Network - See Note 1 |
| R98 | 2.2Ω | 1 | | | High Voltage Rectifier Filament |
| R99 | 680KΩ | 2 % 2 | | | High Voltage Filter |
| R100 | 5600Ω | 2 | RC25A562K | BTB-5600 | Decoupling |
| R101 | 470Ω | 2 | RC25A471K | BTB-470 | Focus Coil Shunt |
| R102 | 470KΩ | ½ | RC22A474K | BTS-470K | Vertical MV Grid - See Note 1 |
| R103 | 220KΩ | 20% ½ | RC24A224M | BTA-220K | Isolation |

Note 1. Not used in all models.
Note 2. Some models use 15KΩ resistor in this application.
Note 3. Some models use 2200Ω resistor in this application.
Note 4. Some models use 680Ω resistor in this application.
Note 5. Some models use 470KΩ resistor in this application.
Note 6. Some models use 220KΩ resistor in this application.
Note 7. Some models use 1.5meg resistor in this application.

## TRANSFORMER (POWER)

| ITEM No. | RATING: PRI. | SEC. 1 | SEC. 2 | SEC. 3 | BENDIX PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. |
|---|---|---|---|---|---|---|---|---|
| T1 | 117VAC @ 2A | 720VCT @ 250ADC | 5VAC @ 3A | 6.3VAC @ 2.45A SEC. 4 6.3VAC @ 7A | TP0Y03 | | | TP-360 |

## TRANSFORMER (SWEEP CIRCUITS)

| ITEM No. | RATING: DC RESISTANCE PRI. | SEC. | BENDIX PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | NOTES |
|---|---|---|---|---|---|---|---|
| T2 | 465Ω | 12Ω Tap 2Ω, 30 and 8.7Ω SEC. 2 0Ω | TS0H04 ① TS0H05 ② | | | | Horiz. Output Trans. |
| T3 | 870Ω | 10Ω | TS0V03 | A-8112 ③ | A-3036 | TS0-5 ③ | Vertical Output |
| T4A | 13Ω | | | DY-7 | MDF-70 | | Horizontal Deflection Coil |
| B | 62Ω | | | | | | Vertical Deflection Coil |
| T5 | 405Ω | | | | MF-2 | | Focus Coil |

① Used in series C172.
② Used in series C200.
③ Drill one new mounting hole.

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING: IMPEDANCE PRI. | IMPEDANCE SEC. | DC RES. PRI. | DC RES. SEC. | BENDIX PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| T6 | 7.6KΩ | 3.7Ω | 480Ω | .6Ω | TA0Z07 | A-3878 ① | A-3019 | R0-9 ② | ① Drill one new mounting hole. |

# PARTS LIST AND DESCRIPTIONS (Continued)

## SPEAKER

| ITEM No. | RATINGS | | REPLACEMENT DATA | | | NOTES |
|---|---|---|---|---|---|---|
| | FIELD RES. | V. C. IMP. | BENDIX PART No. | VIKING PART No. | QUAM PART No. | |
| SP1 | PM | 3.7Ω | SPIR03 | 12J12 | 12A4A | |
| | CONE DIA. | V. C. DIA. | | | | |
| SP2 | 11 3/4" | 1" | | | | |

## COILS (RF-IF)

| ITEM No. | USE | DC RES. | | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|---|
| | | PRI. | SEC. | BENDIX PART No. | MEISSNER PART No. | |
| L1 | Ant. Coil | .1Ω | .1Ω | | | High Band - Part of Tuner Part # AR0T06 |
| L2 | Ant. Coil | .1Ω | 0Ω | | | Low Band - Part of Tuner Part # AR0T06 |
| L3 | RF Coil | 0Ω | | | | Part of Tuner Part #AR0T06 |
| L4 | Mixer Grid Coil | 0Ω | | | | Part of Tuner Part # AR0T06 |
| L5 | Osc. Coil | 0Ω | | | | High Band - Part of Tuner Part # AR0T06 |
| L6 | Osc. Coil | 0Ω | | | | Low Band - Part of Tuner Part # AR0T06 |
| L7 | Sound Trap | .1Ω | | | | Part of Tuner Part # AR0T06 |
| L8 | 1st Video IF | .5Ω | | | | Part of Tuner Part # AR0T06 |
| L9 | 2nd Video IF | .2Ω | .2Ω | T10108 | | |
| L10 | 3rd Video IF | .2Ω | .2Ω | T10107 | | |
| L11 | Peaking | 3Ω | | LF0A15 | | |
| L12 | Peaking | 14Ω | | LC0V08 | | |
| L13 | 4.5MC Trap | .8Ω | | TV0P00 | | |
| L14 | Sound IF | 3.2Ω | | L10T17 | | |
| L15 | Ratio Det. Trans. | 6.2Ω | .4Ω | T10D25 | | Varnished (Waxed Coil 90Ω) |
| L16 | Horiz. Freq. | 50Ω | | L01T24 | | |
| L17 | Horiz. Lin. | 35Ω | | LC0L01 | | |
| L18 | Width Coil | 3.8Ω | | LC0W01 | | Tap at 1.4Ω |

## SELENIUM RECTIFIER

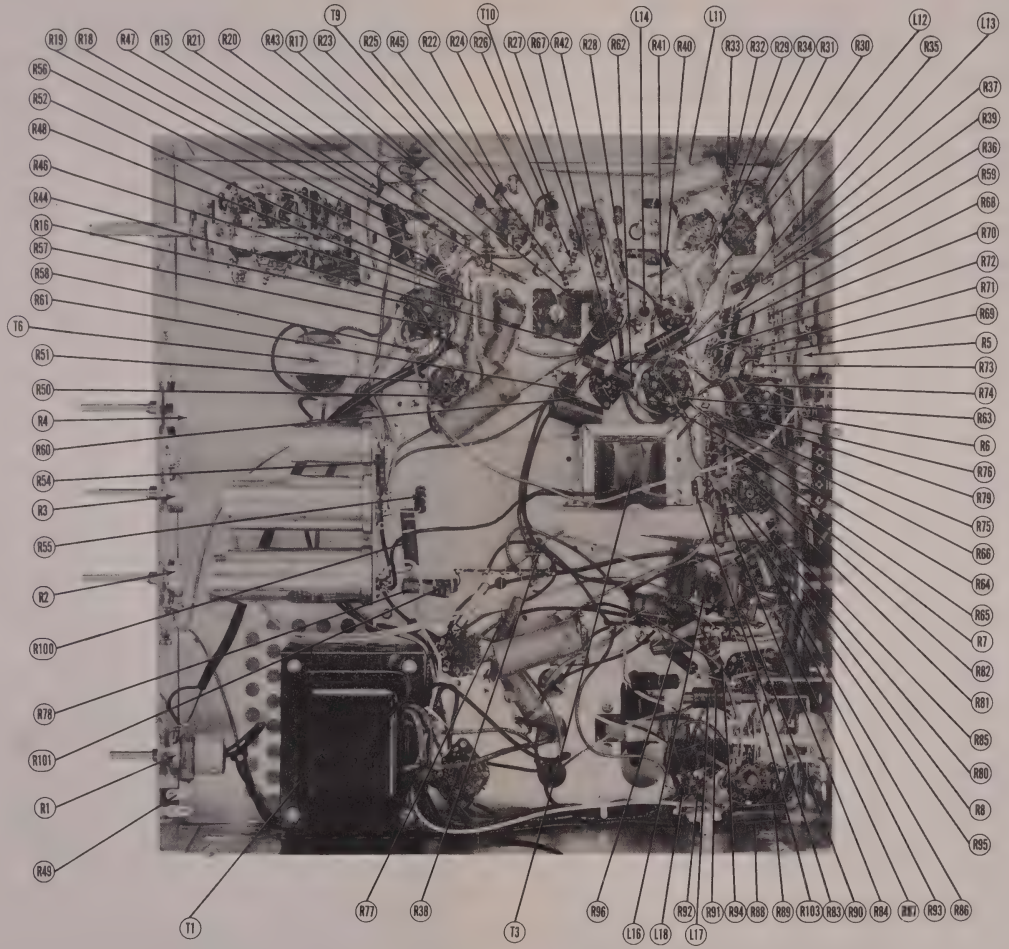
| ITEM No. | RATING | REPLACEMENT DATA | | | NOTES |
|---|---|---|---|---|---|
| | CURRENT | BENDIX PART No. | SYLVANIA PART No. | SELETRON PART No. | |
| M1 | | QR0502 | NB-5 | 1M1 | |

## FUSES

| ITEM No. | TYPE | RATING | REPLACEMENT DATA | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | | | BENDIX PART No. | | LITTELFUSE PART No. | | |
| | | | FUSE | HOLDER | FUSE | HOLDER | |
| M2 | 3AG PigTail | .250 | FC0M01 | | 318.250 | | |

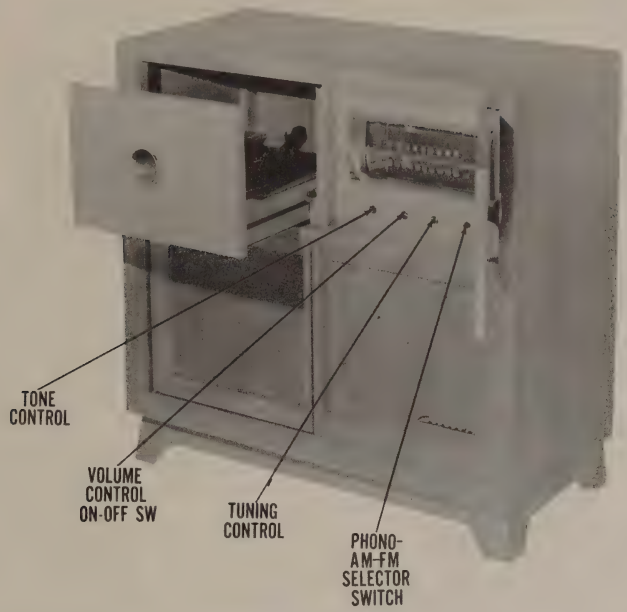
## MISCELLANEOUS

| ITEM No. | PART NAME | BENDIX PART No. | NOTES |
|---|---|---|---|
| M3 | RF Tuner | AR0T06 | |
| M4 | Video Det. Assembly Consists of: | AT0T00 | |
| | 4th Video IF Coil | | |
| | 4.5MC Trap | | |
| | Peaking Coil(Series) | LC0V14 | Wound on 39KΩ Resistor |
| | Peaking Coil - (Parallel) | LC0V09 | |
| | Crystal | | 1N60 |
| | Resistor | RC22A562K | 5.6KΩ 10% |
| | Capacitor | CC6B00 | 5MMF (500V Ceramic) |
| M5 | Switch | SR3B01 | Width |
| M6 | Ion Trap | T10P02 | |
| B2 | Trimmer | CT1A22 | Horizontal Drive (20-270MMF) |
| | Safety Glass | GZ0S10 | 17 Inch Picture Tube |
| | Safety Glass | GZ0S11 | 20 Inch Picture Tube |
| | Knob | KB0B09 | Channel Selector (Model C-172) |
| | Knob | KB0B10 | Channel Selector (Model C-200) |
| | Knob | KC0B38 | Fine Tuning |
| | Knob | KC0B37 | Contrast, Brightness, Horizontal Hold |
| | Knob | KC0B39 | Volume |




CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

CORONADO
MODEL 15RA1-43-7902A



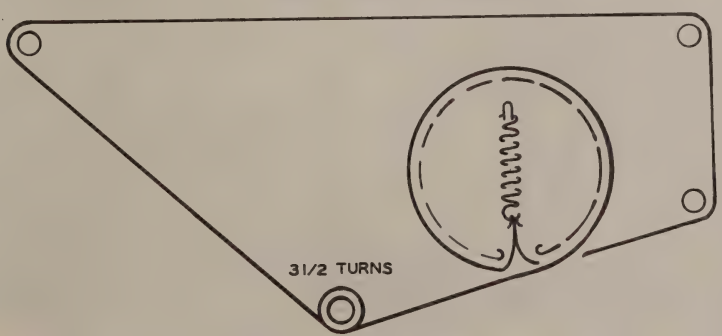

CORONADO
MODEL 15RA1-43-7902A

CORONADO MODEL 15RA1-43-7902A

| | |
|---|---|
| TRADE NAME | Coronado, Model 15RA1-43-7902A |
| SUPPLIER | Gamble - Skogmo, Inc., 15 N. 8 St., Minneapolis, Minnesota |
| TYPE SET | AC Operated Combination Phono-Radio, AM-FM Superheterodyne Receiver With Loop Antenna |
| TUBES (TEN) | Types 6BA6 RF Amp., 12AT7 Converter, 6BA6 1st IF Amp., 6BA6 2nd FM IF Amp., 6AL5 Ratio Det., 6AV6 AM Det.-AVC-AF, 6AV6 Phase Inv., (2) 6K6GT Power Output, 5Y3GT Rectifier |
| POWER SUPPLY | 105-125 Volts AC — RATING .725 Amp. @ 117 Volts AC |
| TUNING RANGE-BROADCAST | 540-1600KC — FREQ. MOD. 88-108MC |

FOR SERVICE INFORMATION ON RECORD CHANGER SEE V-M MODEL 950 IN PHOTOFACT SET 107 FOLDER 13 OR RECORD CHANGER MANUAL CM-3.

TUNING GANG FULLY CLOSED




DIAL CORD DRIVE

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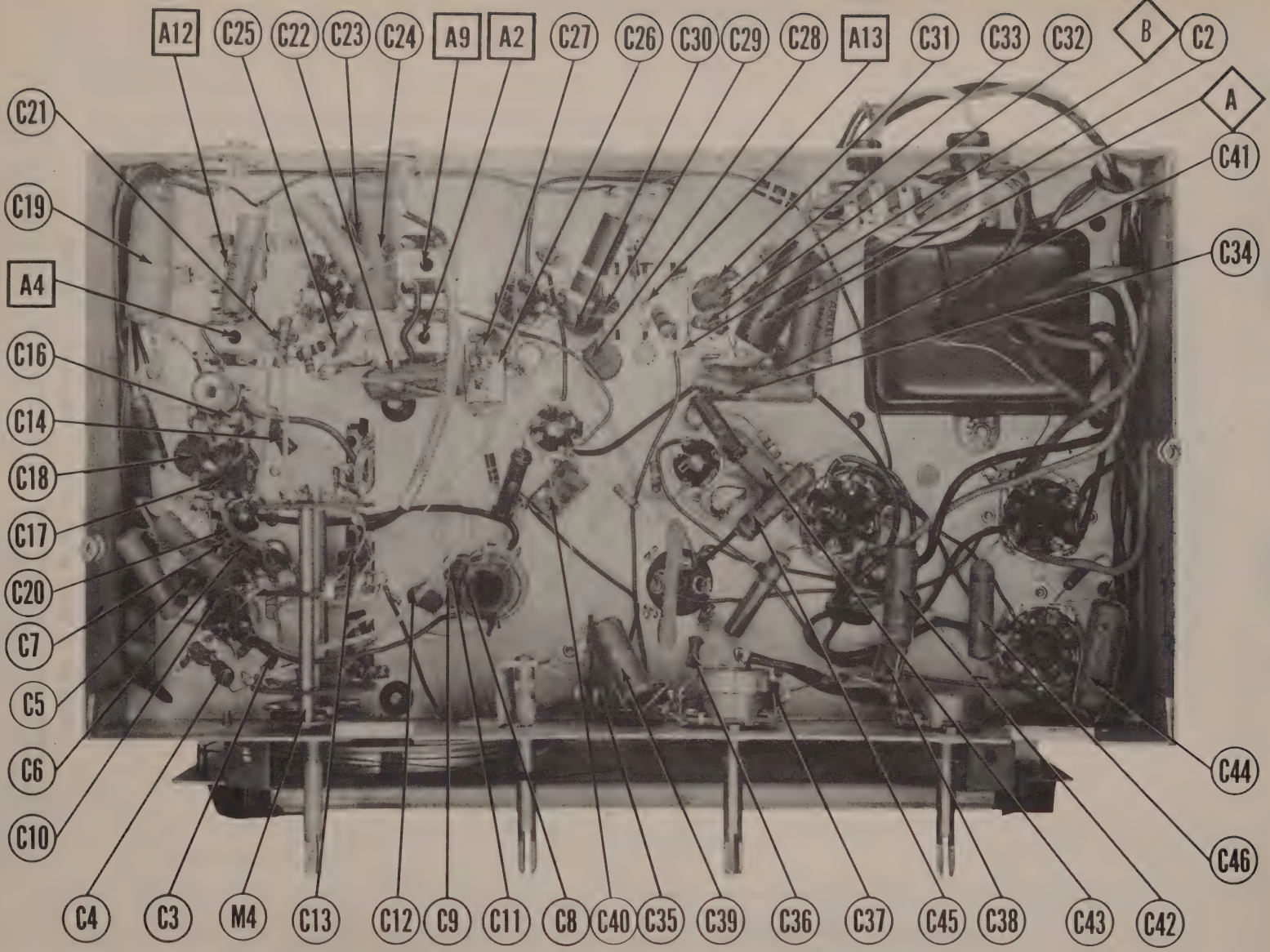
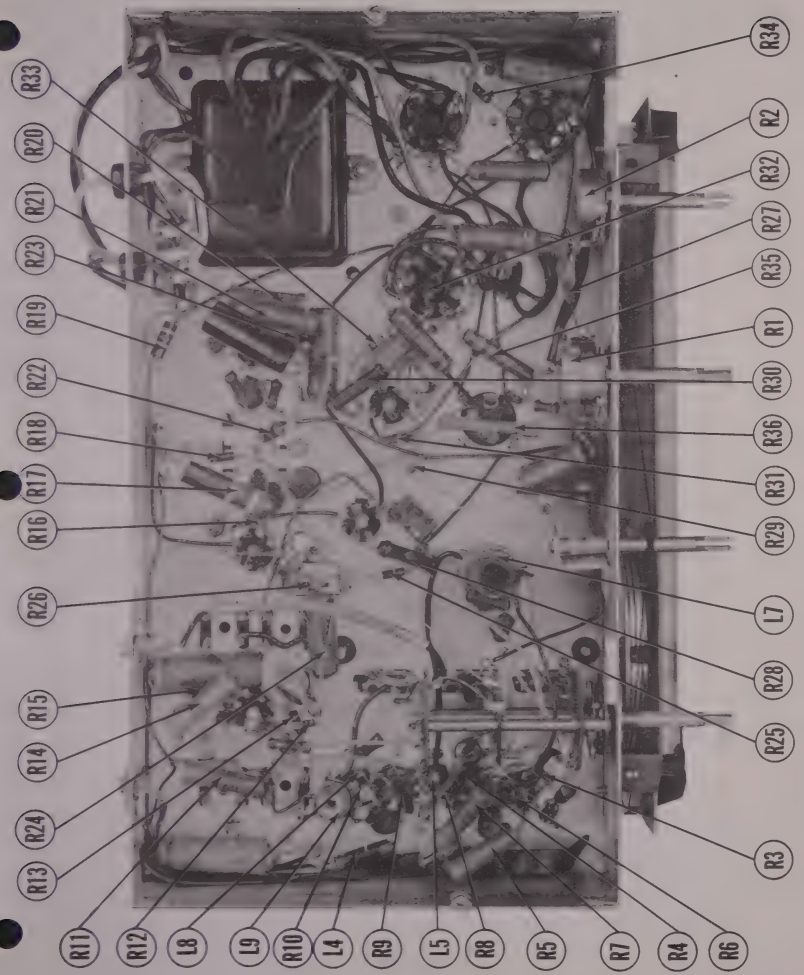
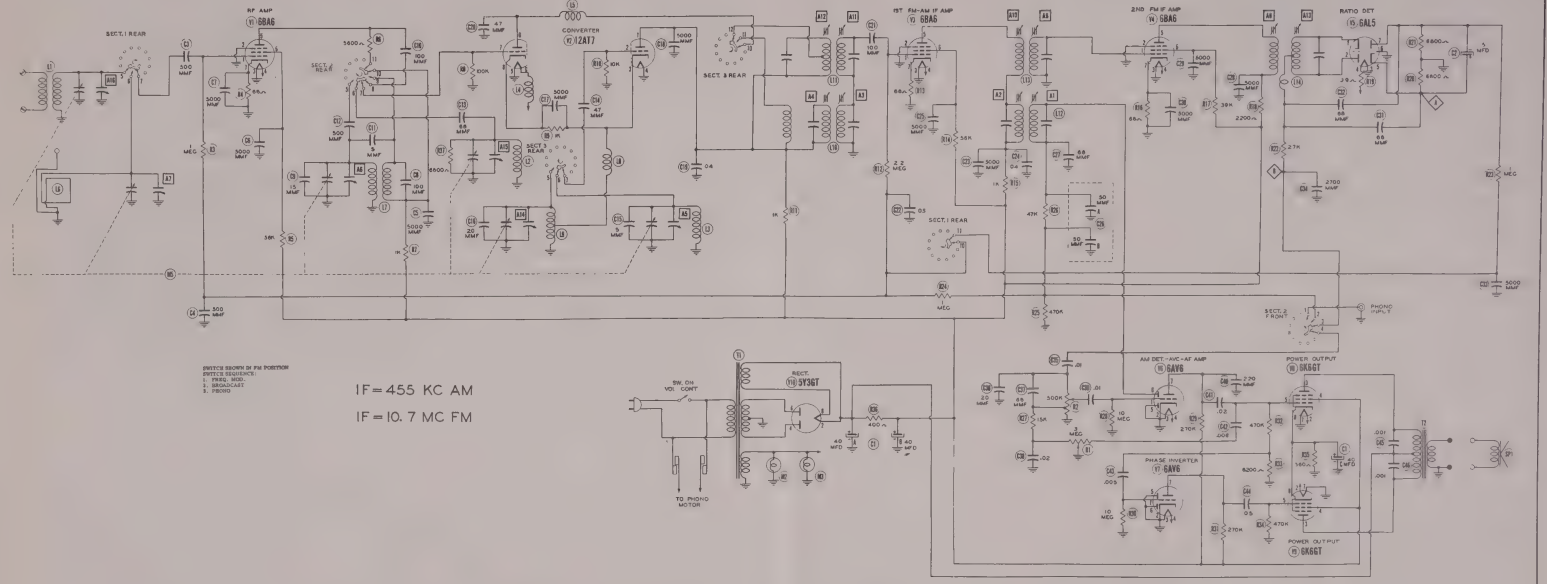

A12
C25
C22
C23
C24
A9
A2
C27
C26
C30
C29
C28
A13
C31
C33
C32
B
C2
A
C41
C34
C21
C19
A4
C16
C14
C18
C17
C20
C7
C5
C6
C10
C44
C46
C4
C3
M4
C13
C12
C9
C11
C8
C40
C35
C39
C36
C37
C45
C38
C43
C42


R34
R33
R2
R20
R32
R21
R27
R23
R35
R19
R1
R22
R30
R18
R36
R17
R31
R16
R29
R26
L7
R28
R15
R25
R14
R24
R13
R3
R11
R12
L8
L9
R10
L4
R9
L5
R8
R5
R7
R4
R6


RF AMP
V1 6BA6
CONVERTER
V2 12AT7
1ST FM-AM IF AMP
V3 6BA6
2ND FM IF AMP
V4 6BA6
RATIO DET
V5 6AL5
SECT. 1 REAR
SECT. 2 REAR
SECT. 3 REAR
SECT. 1 FRONT
SECT. 2 FRONT
SECT. 3 FRONT
SECT. 4 REAR
SECT. 4 FRONT
SECT. 5 REAR
SECT. 5 FRONT
SECT. 6 REAR
SECT. 6 FRONT
SECT. 7 REAR
SECT. 7 FRONT
SECT. 8 REAR
SECT. 8 FRONT
SECT. 9 REAR
SECT.

## AUGMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING AUGMENT

To set pointer, turn tuning gang fully closed and set the pointer even with the left hand end of the last calibration mark at the low frequency end of the dial background.

### AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.

Volume control should be set at maximum. Use an insulated alignment screwdriver for adjustments. Signal generator should be no higher than necessary to obtain an output reading.

| | SIGNAL GENERATOR CONNECTION | SIGNAL GENERATOR FREQUENCY | RADIO BAND SWITCH SETTING | RADIO DIAL SETTING | OUTPUT METER | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | DUMMY ANTENNA | | | | | | |
| 5 | SIGNAL COUPLING | | | | | | |
| 4 | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | OUTPUT METER | ADJUST | REMARKS |
| 3 | 1MFD | High side to Pin 7 (grid of 12A7T) (Y2). Low side to chassis. | Loop | 1650KC | Tune for max. output | A1, A2, A3, A4 | Adjust for maximum output. |
| 2 | DUMMY ANTENNA | | | | | | |
| 1 | SIGNAL COUPLING | | | | | | |
| | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | OUTPUT METER | ADJUST | REMARKS |
| | 1MFD | High side to Pin 7 (grid of 12A7T) (Y2). Low side to chassis. | Loop | 1650KC | Tune for max. output | A1, A2, A3, A4 | Adjust for maximum output. |

Repeat steps of several times if wire and radiate signal into loop of receiver. Adjust for max. output.

### FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

| | SIGNAL GENERATOR CONNECTION | SIGNAL GENERATOR FREQUENCY | RADIO BAND SWITCH SETTING | RADIO DIAL SETTING | VTVM CONNECT | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | DUMMY ANTENNA | | | | | | |
| 5 | SIGNAL COUPLING | | | | | | |
| 4 | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | VTVM CONNECT | ADJUST | REMARKS |
| 3 | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (Dimond.) | Tuning gang fully open | A6, A7 | Adjust for maximum deflection. |
| 2 | DUMMY ANTENNA | | | | | | |
| 1 | SIGNAL COUPLING | | | | | | |
| | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (CW) | Tuning gang fully open | A6, A8 | Adjust for maximum deflection. |

Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting

### FM RF ALIGNMENT

| | SIGNAL GENERATOR CONNECTION | SIGNAL GENERATOR FREQUENCY | RADIO BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | DUMMY ANTENNA | | | | | | |
| 5 | SIGNAL COUPLING | | | | | | |
| 4 | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| 3 | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (CW) | Tuning gang fully open | A6, A8 | Adjust for maximum deflection. |
| 2 | DUMMY ANTENNA | | | | | | |
| 1 | SIGNAL COUPLING | | | | | | |
| | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (Dimond.) | Tuning gang fully open | A6, A7 | Adjust for maximum deflection. |

Use 120 % sawtooth voltage in scope for horizontal deflection

### FM RF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

| | SIGNAL GENERATOR CONNECTION | SIGNAL GENERATOR FREQUENCY | RADIO BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | DUMMY ANTENNA | | | | | | |
| 5 | SIGNAL COUPLING | | | | | | |
| 4 | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| 3 | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (CW) | Tuning gang fully open | A6, A8 | Adjust for maximum deflection. |
| 2 | DUMMY ANTENNA | | | | | | |
| 1 | SIGNAL COUPLING | | | | | | |
| | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (Dimond.) | Tuning gang fully open | A6, A7 | Adjust for maximum deflection. |

| | SIGNAL GENERATOR CONNECTION | SIGNAL GENERATOR FREQUENCY | RADIO BAND SWITCH SETTING | RADIO DIAL SETTING | VTVM CONNECT | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | DUMMY ANTENNA | | | | | | |
| 5 | SIGNAL COUPLING | | | | | | |
| 4 | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | VTVM CONNECT | ADJUST | REMARKS |
| 3 | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (Dimond.) | Tuning gang fully open | A6, A8 | Adjust for maximum deflection. |
| 2 | DUMMY ANTENNA | | | | | | |
| 1 | SIGNAL COUPLING | | | | | | |
| | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | VTVM CONNECT | ADJUST | REMARKS |
| | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (Dimond.) | Tuning gang fully open | A6, A7 | Adjust for maximum deflection. |

Reconnect capacitor C3. Adjust A13 so 10.7MC occurs at center of sweep. Adjust A12 for max. amplitude and straightness of crossover knee.

Disconnect stabilizer capacitor C2. Adjust for maximum amplitude and symmetry as per figure 1.

| | SIGNAL GENERATOR CONNECTION | SIGNAL GENERATOR FREQUENCY | RADIO BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | DUMMY ANTENNA | | | | | | |
| 5 | SIGNAL COUPLING | | | | | | |
| 4 | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| 3 | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (CW) | Tuning gang fully open | A6, A8 | Adjust for maximum deflection. |
| 2 | DUMMY ANTENNA | | | | | | |
| 1 | SIGNAL COUPLING | | | | | | |
| | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (Dimond.) | Tuning gang fully open | A6, A7 | Adjust for maximum deflection. |

Reconnect capacitor C3. Adjust A13 so 10.7MC occurs at center of sweep. Adjust A12 for max. amplitude and straightness of crossover knee.

Disconnect stabilizer capacitor C2. Adjust for maximum amplitude and symmetry as per figure 1.

| | SIGNAL GENERATOR CONNECTION | SIGNAL GENERATOR FREQUENCY | RADIO BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | DUMMY ANTENNA | | | | | | |
| 5 | SIGNAL COUPLING | | | | | | |
| 4 | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| 3 | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (CW) | Tuning gang fully open | A6, A8 | Adjust for maximum deflection. |
| 2 | DUMMY ANTENNA | | | | | | |
| 1 | SIGNAL COUPLING | | | | | | |
| | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (Dimond.) | Tuning gang fully open | A6, A7 | Adjust for maximum deflection. |

Reconnect capacitor C3. Adjust A13 so 10.7MC occurs at center of sweep. Adjust A12 for max. amplitude and straightness of crossover knee.

Disconnect stabilizer capacitor C2. Adjust for maximum amplitude and symmetry as per figure 1.

| | SIGNAL GENERATOR CONNECTION | SIGNAL GENERATOR FREQUENCY | RADIO BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | DUMMY ANTENNA | | | | | | |
| 5 | SIGNAL COUPLING | | | | | | |
| 4 | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| 3 | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (CW) | Tuning gang fully open | A6, A8 | Adjust for maximum deflection. |
| 2 | DUMMY ANTENNA | | | | | | |
| 1 | SIGNAL COUPLING | | | | | | |
| | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (Dimond.) | Tuning gang fully open | A6, A7 | Adjust for maximum deflection. |

Reconnect capacitor C3. Adjust A13 so 10.7MC occurs at center of sweep. Adjust A12 for max. amplitude and straightness of crossover knee.

Disconnect stabilizer capacitor C2. Adjust for maximum amplitude and symmetry as per figure 1.

| | SIGNAL GENERATOR CONNECTION | SIGNAL GENERATOR FREQUENCY | RADIO BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | DUMMY ANTENNA | | | | | | |
| 5 | SIGNAL COUPLING | | | | | | |
| 4 | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| 3 | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (CW) | Tuning gang fully open | A6, A8 | Adjust for maximum deflection. |
| 2 | DUMMY ANTENNA | | | | | | |
| 1 | SIGNAL COUPLING | | | | | | |
| | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| | 6MFD | High side to Pin 1 (grid of 6BA6 (Y3). Low side to chassis. | FM | 10.7MC (Dimond.) | Tuning gang fully open | A6, A7 | Adjust for maximum deflection. |

Reconnect capacitor C3. Adjust A13 so 10.7MC occurs at center of sweep. Adjust A12 for max. amplitude and straightness of crossover knee.

Disconnect stabilizer capacitor C2. Adjust for maximum amplitude and symmetry as per figure 1.

| | SIGNAL GENERATOR CONNECTION | SIGNAL GENERATOR FREQUENCY | RADIO BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6 | DUMMY ANTENNA | | | | | | |
| 5 | SIGNAL COUPLING | Two 330Ω Access. FM ant. resistors to each lead | | | | | |
| 4 | SIGNAL GENERATOR FREQUENCY | 106 -10.7MC (Dimond.) | FM | Tuning gang fully open | VTVM | A14 | Tune for max. output |
| 3 | 10.7MC | | | | DC probe to Point ⑬ Common to chassis. | A15, A16 | Adjust for maximum deflection. |
| 2 | SIGNAL COUPLING | | | | | | |
| 1 | SIGNAL GENERATOR FREQUENCY | | BAND SWITCH SETTING | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
| | 10.7MC | | | | | | |

FIG. 1

FIG. 2

# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA: CORONADO PART No. | REPLACEMENT DATA: STANDARD REPLACEMENT | RMA BASE TYPE | INSTALLATION NOTES |
|---|---|---|---|---|---|
| V1 | RF Amplifier | 6BA6 | 6BA6 | 7BK | |
| V2 | Converter | 12AT7 | 12AT7 | 9A | |
| V3 | 1st FM-AM IF Amp | 6BA6 | 6BA6 | 7BK | |
| V4 | 2nd FM-IF Amp. | 6BA6 | 6BA6 | 7BK | |
| V5 | Ratio Detector | 6AL5 | 6AL5 | 6BT | |
| V6 | AM Det. -AVC-AF | 6AV6 | 6AV6 | 7BT | |
| V7 | Phase Inverter | 6AV6 | 6AV6 | 7BT | |
| V8 | Power Output | 6K6GT | 6K6GT | 7S | |
| V9 | Power Output | 6K6GT | 6K6GT | 7S | |
| V10 | Rectifier | 5Y3GT | 5Y3GT | 5T | |

## CAPACITORS

**Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

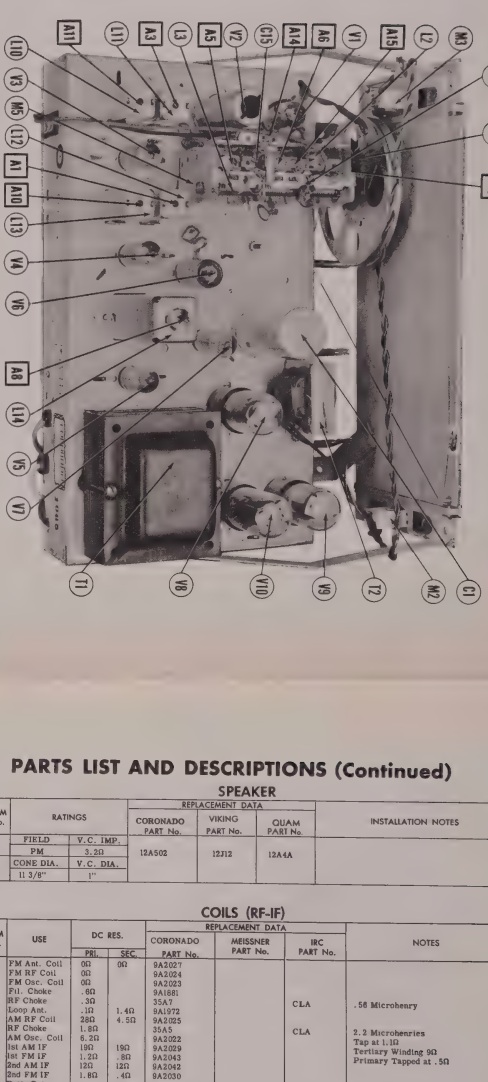
| ITEM No. | RATING: CAP. | RATING: VOLT | REPLACEMENT DATA: CORONADO PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C1A | 40 | 450 | 45X374 | AFH8828A | | UPT444 - 5C4 | | TVL-3758 | ■ Filter |
| B | 40 | 450 | | | | | | | ● Filter |
| C | 40 | 25 | | | | | | | ▲ Output Cathode |
| C2 | 5 | 100 | 45X36L | PR8150/4 | | BR415 | | TVA-1402 | Stabilizing Cap |
| C3 | 500 | | 47X496 | SI500 | D6-501 | 5WS7S | GP2K-500 | 19C32 | RF Coupling |
| C4 | 500 | | 47X496 | SI500 | D6-501 | 5WS7S | GP2K-500 | 19C32 | AVC Filter |
| C5 | 5000 | | 47X507 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | RF Amp. Plate Dec. |
| C6 | 5000 | | 47X507 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | RF Amp. Screen |
| C7 | 5000 | | 47X507 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | RF Amp. Cathode |
| C8 | 100 | | SD100N750 | TCN-100 | | | N750L-100 | 29C16 | Fixed Trimmer |
| C9 | 15 | | 47X552 | SI5N750 | TCN-15 | | N750K-15 | 19C16 | Fixed Trimmer |
| C10 | 100 | | 47X497 | SI100 | D6-101 | 5WS7I | GP1K-100 | 19C11 | RF Coupling |
| C11 | 5 | | 47X549 | SI5 | TCZ-4.7 | 5WS7S | GP1K-5 | MS-55 | RF Coupling |
| C12 | 500 | | 47X496 | SI500 | D6-501 | 5WS7S | GP2K-500 | 19C32 | RF Coupling |
| C13 | 68 | | 47X50L | SI68 | D6-680 | 5WSQ7 | GP1K-68 | 19C10 | RF Coupling |
| C14 | 47 | | 47X498 | SI47 | D6-470 | 5WSQ5 | GP1K-47 | 19C25 | Fixed Trimmer |
| C15 | 5 | | 47X549 | | | | N330K-5 | | Fixed Trimmer |
| C16 | 30 | | 47X516 | SI30 | D6-300 | 5WSQ2 | GP1K-30 | MS-42 | Fixed Trimmer |
| C17 | 5000 | | 47X507 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | Conv. Cath. Bypass |
| C18 | 5000 | | 47X507 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | Osc. Plate Bypass |
| C19 | .04 | 600 | F66403 | P688-04 | | PTE584 | | 6TM-S4 | Conv. Decoupling |
| C20 | 47 | | 47X499 | SI47 | D6-470 | 5WSQ5 | GP1K-47 | 19C25 | Fixed Trimmer |
| C21 | 100 | | 47X550 | SI100 | D6-101 | 5WST1 | GP1K-100 | 19C11 | IF Coupling |
| C22 | .05 | 200 | B66503 | P288-05 | DF-503 | PTE485 | | 2TM-S5 | AVC Filter |
| C23 | 5000 | | 47X507 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | 1st IF Plate Dec. |
| C24 | .04 | 600 | F66403 | P688-04 | | PTE584 | | 6TM-S4 | 1st IF Plate Dec. |
| C25 | 5000 | | 47X507 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | 1st IF Screen |
| C26A | 50 | | 47X512 | SI50 | D6-500 | 5WSQ5 | GP1K-50 | 19C28 | Diode RF Filter |
| B | 50 | | | SI50 | D6-500 | 5WSQ5 | GP1K-50 | 19C28 | Diode RF Filter |
| C27 | 68 | | 47X50L | SI68 | D6-680 | 5WSQ7 | GP1K-68 | 19C10 | Diode RF Filter |
| C28 | 5000 | | 47X507 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | 2nd IF Plate Dec. |
| C29 | 5000 | | 47X507 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | 2nd IF Screen |
| C30 | 5000 | | 47X507 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | 2nd IF Cathode |
| C31 | 68 | | 47X50L | SI68 | D6-680 | 5WSQ7 | GP1K-68 | 19C10 | Diode Load Cap |
| C32 | 68 | | 47X50L | SI68 | D6-680 | 5WSQ7 | GP1K-68 | 19C10 | Diode Load Cap |
| C33 | 5000 | | 47X507 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | AVC Filter |
| C34 | 2700 | | 47X492 | SI2700 | D6-272 | 1W5D25 | GP2M-0027 | 1FM-225 | De-emphasis |
| C35 | .01 | 120 | 46X328 | P488-01 | D6-103 | PTE481 | 821-01 | 4TM-S1 | Audio Coupling |
| C36 | .20 | 600 | 47X516 | SI20 | D6-200 | 5WSQ2 | GP1K-20 | 19C23 | RF Bypass |
| C37 | 68 | 500 | 47X471 | SI68 | D6-680 | 5WSQ7 | GP1K-68 | 19C10 | Tone Comp. |
| C38 | .02 | 200 | B66203 | P488-02 | DF-203 | PTE482 | | 2TM-S2 | Tone Comp. |
| C39 | .01 | 600 | F66103 | P688-01 | D6-103 | PTE581 | 821-01 | 6TM-S1 | Audio Coupling |
| C40 | 220 | 500 | 47X468 | 1468-00025 | D6-221 | 5WST25 | GP2K-220 | 19C13 | AF Amp. Plate |
| C41 | .02 | 600 | F66203 | P688-02 | DF-203 | PTE582 | | 6TM-S2 | Audio Coupling |
| C42 | .006 | 600 | F66602 | P688-006 | D6-562 | PTE5D6 | 811-005 | 6TM-D6 | Tone Comp. |
| C43 | .005 | 600 | B68502 | P688-005 | D6-502 | PTE5D5 | 811-005 | 6TM-D5 | Audio Coupling |
| C44 | .05 | 200 | F66203 | P288-05 | DF-503 | PTE485 | | 2TM-S5 | Audio Coupling * |
| C45 | .001 | 600 | F66102 | P688-001 | D6-102 | PTE5D1 | GP2L-001 | 6TM-D1 | Output Plate |
| C46 | .001 | 600 | F66102 | P688-001 | D6-102 | PTE5D1 | GP2L-001 | 6TM-D1 | Output Plate |

* Some models use .02MFD in this application.

SCT 134

FOLDER 6

## CHASSIS—TOP VIEW




# PARTS LIST AND DESCRIPTIONS (Continued)

## CONTROLS

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: CORONADO PART No. | IRC PART No. | CLAROSTAT PART No. | CENTRALAB PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| R1A | 3 Meg | ½ | 41X288 | QI3-140 | AG-67-Z | AN-85 | Tone Control |
| B | Shaft | | Not req. | Not req. | KSS-3 | AK-4 | Attach to R1A Per Instructions |
| R2A | 500KΩ | ½ | 36X379 | † QI8-133XX | AK-80 | BTSK-68-S | Volume Control - Tapped ⑤ 100KΩ |
| B | Shaft | | Not req. | Not req. | KSS-3 | Not req. | Attach to R2A Per Instructions |
| C | Switch | | Not req. | 76-1 | SWB | Not req. | Attach to R2A Per Instructions |

† Use only the 100KΩ tap.

## RESISTORS

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: CORONADO PART No. | IRC PART No. | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| R3 | 1Meg | ½ | B68105 | BTS-1Meg | RF Amp. Grid |
| R4 | 68Ω | ½ | B83680 | | RF Amp. Cathode |
| R5 | 56KΩ | ½ | B84563 | BTS-56K | RF Amp. Screen |
| R6 | 5600Ω | ½ | B84562 | BTS-5600 | RF Amp. Plate |
| R7 | 1000Ω | ½ | B84102 | BTS-1000 | RF Amp. Plate Decoupling |
| R8 | 100KΩ | ½ | B85104 | BTS-100K | Converter Grid |
| R9 | 1000Ω | ½ | B84102 | BTS-1000 | Converter Cathode |
| R10 | 10KΩ | ½ | B84103 | BTS-10K | Osc. Grid |
| R11 | 1000Ω | ½ | B84102 | BTS-1000 | Converter Decoupling |
| R12 | 2.2Meg | ½ | B85225 | BTS-2.2Meg | 1st IF Amp. Grid |
| R13 | 68Ω | ½ | B83680 | | 1st IF Amp. Cathode |
| R14 | 56KΩ | ½ | B84563 | BTS-56K | 1st IF Amp. Screen |
| R15 | 1000Ω | ½ | B84102 | BTS-1000 | 1st IF Amp. Plate Decoupling |
| R16 | 68Ω | ½ | B83680 | | 2nd FM IF Amp. Cathode |
| R17 | 39KΩ | 2 | C84393 | BTB-39K | 2nd FM IF Amp. Screen |
| R18 | 2200Ω | ½ | B85223 | BTS-2200 | 2nd FM IF Amp. Plate Decoupling |
| R19 | 3.9Ω | 1 | | BW-1-3.9 | Ratio Det. Diode Filament - See Note |
| R20 | 6800Ω | ½ | B83682 | BTS-6800 | Ratio Det. Diode Load |
| R21 | 6800Ω | ½ | B83682 | BTS-6800 | Ratio Det. Diode Load |
| R22 | 27KΩ | ½ | B84273 | BTS-27K | De-emphasis |
| R23 | 1Meg | ½ | B85105 | BTS-1Meg | AVC Network |
| R24 | 1Meg | ½ | B85105 | BTS-1Meg | AVC Network |
| R25 | 470KΩ | ½ | B85474 | BTS-470K | Diode Load |
| R26 | 47KΩ | ½ | B85473 | BTS-47K | Diode Filter |
| R27 | 15KΩ | ½ | B85153 | BTS-15K | Tone Compensation |
| R28 | 10Meg | ½ | B85106 | BTS-10Meg | AF Amp. Grid |
| R29 | 270KΩ | ½ | B85274 | BTS-270K | AF Amp. Plate |
| R30 | 10Meg | ½ | B85106 | BTS-10Meg | Phase Inv. Grid |
| R31 | 270KΩ | ½ | B85274 | BTS-270K | Phase Inv. Plate |
| R32 | 470KΩ | ½ | B85474 | BTS-470K | Output Grid |
| R33 | 8200Ω | ½ | B84823 | BTS-8200 | Output Grid |
| R34 | 470KΩ | ½ | B85474 | BTS-470K | Output Grid |
| R35 | 560Ω | 2 | B83561 | BTS-560 | Output Cathode |
| R36 | 1400Ω | 5 | 43X343 | 1 3/4A-1450 | Filter - Wire Wound |
| R37 | 6800 | ½ | B85682 | BTS-6800 | FM RF Coil Shunt |

Note: Some models use 3.6Ω resistor in this application.

## TRANSFORMER (POWER)

| ITEM No. | RATING: PRI. | RATING: SEC. 1 | RATING: SEC. 2 | RATING: SEC. 3 | REPLACEMENT DATA: CORONADO PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. |
|---|---|---|---|---|---|---|---|---|
| T1 | 117VAC ② .725A | 650VCT ⑤ .098ADC | 5VAC ⑤ 2A | 6.3VAC 3.2A | 53X286 | PM-8410 ①③ | P-2953 ② | PH-90 ① ② |

① Drill new mounting holes.
② Add series resistor to reduce plate voltage.

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING: IMPEDANCE PRI. | RATING: IMPEDANCE SEC. | RATING: DC RES. PRI. | RATING: DC RES. SEC. | REPLACEMENT DATA: CORONADO PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| T2 | 10KΩ CT | 3.2Ω | 475Ω CT | .5Ω | 51X142 | A-3823 | A-2938 | RO-110 ③ | ③ Drill one new mounting hole. |

# PARTS LIST AND DESCRIPTIONS (Continued)

## SPEAKER

| ITEM No. | RATINGS: FIELD | RATINGS: V.C. IMP. | REPLACEMENT DATA: CORONADO PART No. | VIKING PART No. | QUAM PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|
| SP1 | PM | 3.2Ω | 12A502 | 12J12 | 12A4A | |
| | CONE DIA. | V.C. DIA. | | | | |
| SP2 | 11 3/8" | 1" | | | | |

## COILS (RF-IF)

| ITEM No. | USE | DC RES. PRI. | DC RES. SEC. | REPLACEMENT DATA: CORONADO PART No. | MEISSNER PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|---|---|
| L1 | FM Ant. Coil | 0Ω | 0Ω | 9A2027 | | | |
| L2 | FM RF Coil | 0Ω | | 9A2024 | | | |
| L3 | FM Osc. Coil | 0Ω | | 9A2023 | | | |
| L4 | Fil. Choke | .6Ω | | 9A1681 | | | |
| L5 | RF Choke | .3Ω | | 35A7 | | CLA | .56 Microhenry |
| L6 | Loop Ant. | .1Ω | 1.4Ω | 9A1972 | | | |
| L7 | AM RF Coil | 28Ω | 4.5Ω | 9A2025 | | | |
| L8 | RF Choke | 1.8Ω | | 35A5 | | CLA | 2.2 Microhenries |
| L9 | AM Osc. Coil | 6.2Ω | | 9A2022 | | | Tap at 1.1Ω |
| L10 | 1st AM IF | 19Ω | 19Ω | 9A2029 | | | Tertiary Winding 9Ω |
| L11 | 1st FM IF | 1.2Ω | .8Ω | 9A2043 | | | Primary Tapped at .5Ω |
| L12 | 2nd AM IF | 12Ω | 12Ω | 9A2042 | | | |
| L13 | 2nd FM IF | 1.8Ω | .4Ω | 9A2030 | | | |
| L14 | Ratio Det. Trans. | 1.2Ω | .1Ω | 9A2161 | | | |

## PHONO CARTRIDGE and NEEDLE

| ITEM No. | CORONADO PART No. | REPLACEMENT DATA: ASTATIC PART No. CARTRIDGE | ASTATIC PART No. NEEDLE | SHURE PART No. CARTRIDGE | SHURE PART No. NEEDLE | ELECTRO-VOICE PART No. CARTRIDGE | ELECTRO-VOICE PART No. NEEDLE | REMARKS |
|---|---|---|---|---|---|---|---|---|
| M1 | | AC-AG-J | A-AG | W26B | A56U | 33 | 0-2 or S-2 | |

ASTATIC, SHURE AND ELECTRO-VOICE NEEDLE LISTINGS SHOWN ABOVE ARE SPECIFIED FOR THE RESPECTIVE REPLACEMENT CARTRIDGES LISTED.

## DIAL LIGHTS

| ITEM No. | BASE TYPE | VOLTS | AMPS. | BEAD COLOR | REPLACEMENT DATA: CORONADO PART No. | NOTES |
|---|---|---|---|---|---|---|
| M2 | Bayonet | 6-8 | .15 | Brown | 7A103 | Type #47 |
| M2 | Bayonet | 6-8 | .15 | Brown | 7A103 | Type # 47 |

## MISCELLANEOUS

| ITEM No. | PART NAME | CORONADO PART No. | NOTES |
|---|---|---|---|
| M4 | Switch | 2A404 | AM-FM-Phono |
| M5 | 3 Gang Var. Cap | 14A207 | (20-473MMF, 20-473MMF, 32-215MMF) |
| A14 | Trimmer | 26A469 | FM Osc. Adjustment |
| | Dial Pointer | 15X251 | |
| | Dial Glass | 58X716 | |
| | Knob | 10A772 | |

PHOTOFACT* Folder

# FADA MODELS S6C55, S6C70, S6T65, S7C70, S7T65, S9C10, S1055, S1055X, S1060, S1065

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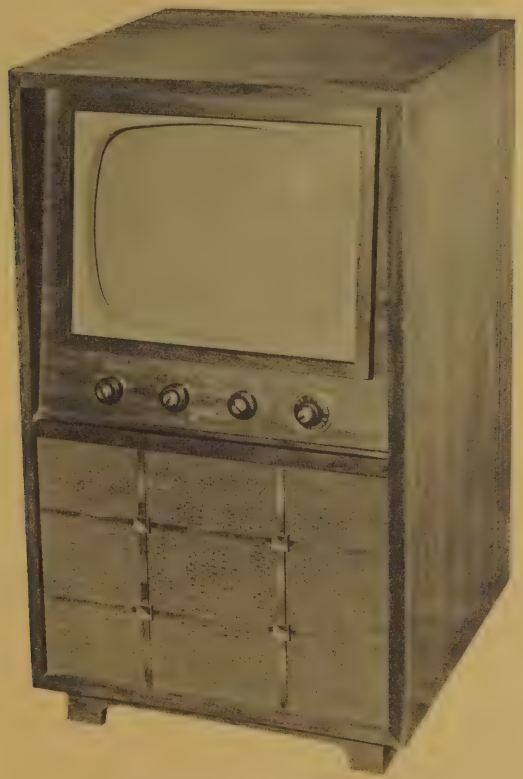

MODEL S7C70

FADA MODELS S6C55, S6C70, S6T65, S7C70, S7T65, S9C10, S1055, S1055X, S1060, S1065

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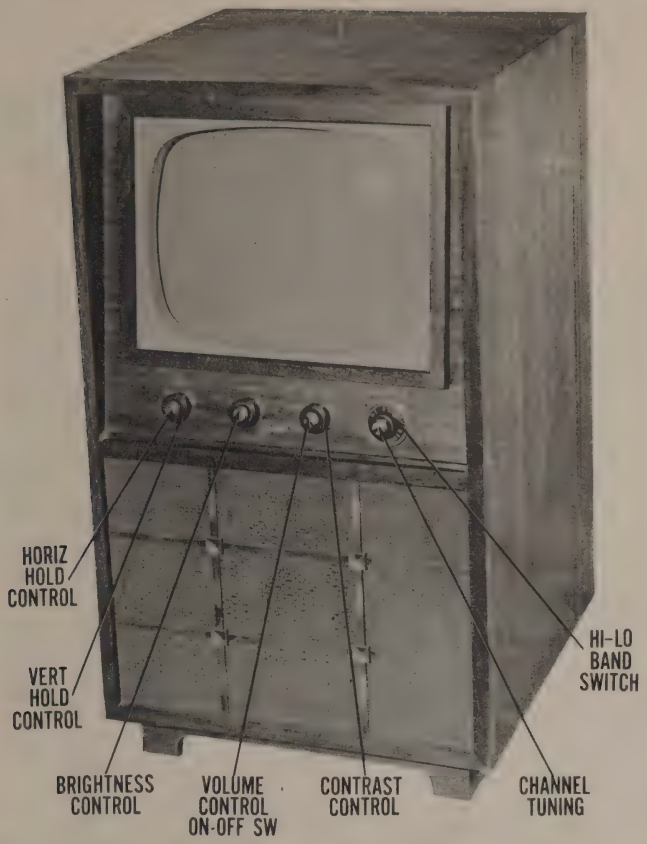
DATE 5-51 SET 134 FOLDER 7

# FADA MODELS S6C55, S6C70, S6T65, S7C70, S7T65, S9C10, S1055, S1055X, S1060, S1065




FADA MODELS S6C55, S6C70, S6T65, S7C70, S7T65, S9C10, S1055, S1055X, S1060, S1065

FADA MODEL S7C70

| | |
|---|---|
| TRADE NAME | Fada, Models S6C55, S6C70, S6T65, S7C70, S7T65, S9C10, S1055, X, S1060, S1065 |
| MANUFACTURER | Fada Radio And Electric Co., Inc., 525 Main St., Belleville, N. J. |
| TYPE SET | Television Receiver |
| TUBES | Twenty Two |
| POWER SUPPLY | 110-120 Volts AC - 60 Cycle |
| | RATING 2.25 Amp. @ 117 Volts AC |
| TUNING RANGE— | Channels 2 thru 13 |

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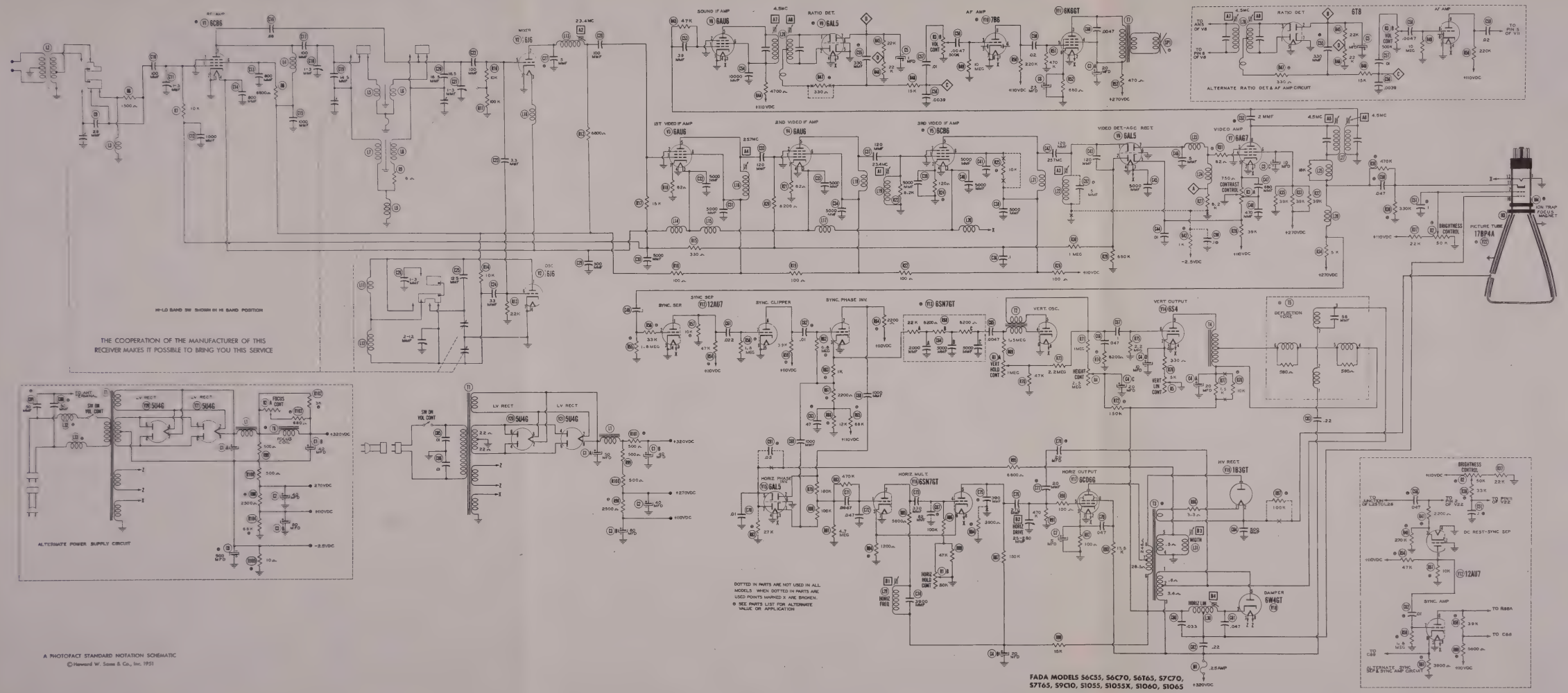
THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
ALTERNATE POWER SUPPLY CIRCUIT
ALTERNATE RATIO DET & AF AMP CIRCUIT
ALTERNATE SYNC SEP & SYNC AMP CIRCUIT
DOTTED IN PARTS ARE NOT USED IN ALL MODELS WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN.
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1951
FADA MODELS S6C55, S6C70, S6T65, S7C70, S7T65, S9C10, S1055, S1055X, S1060, S1065

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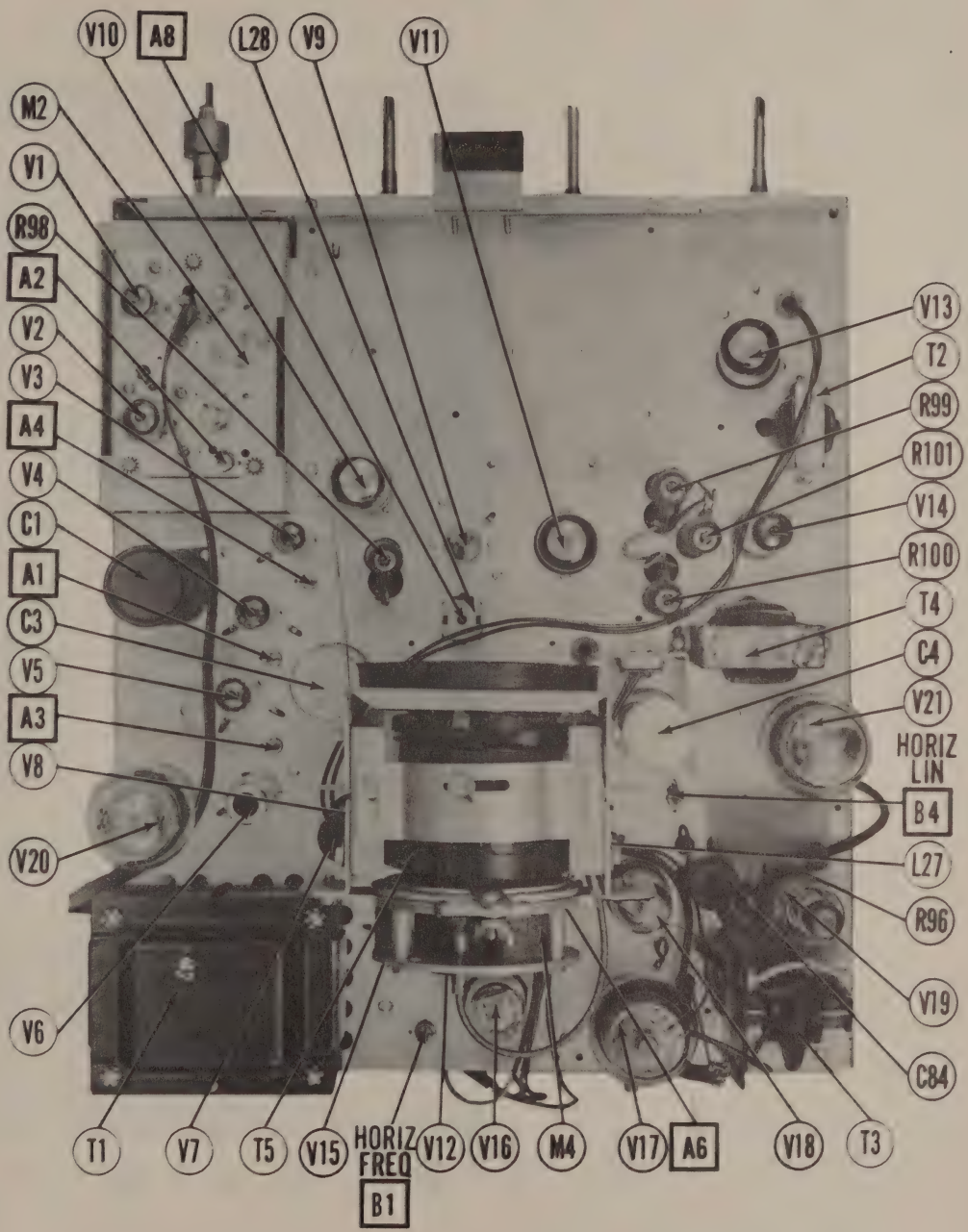
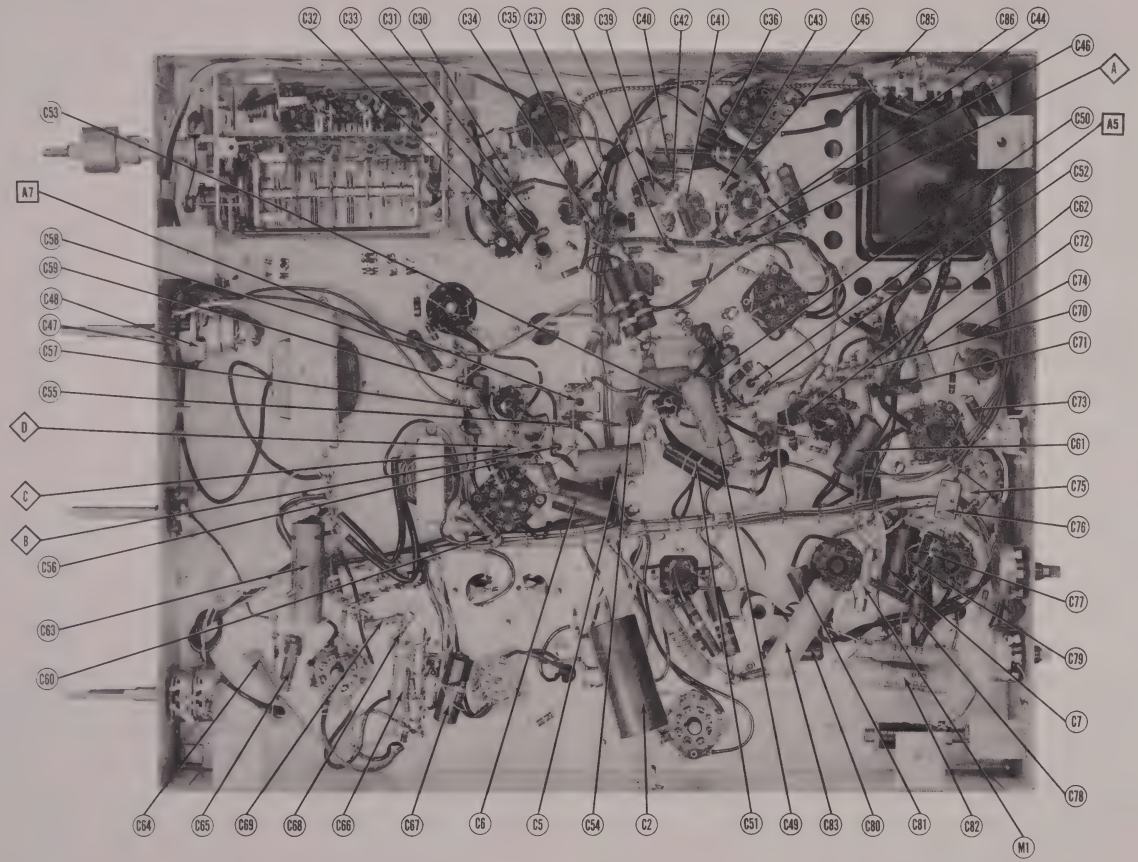
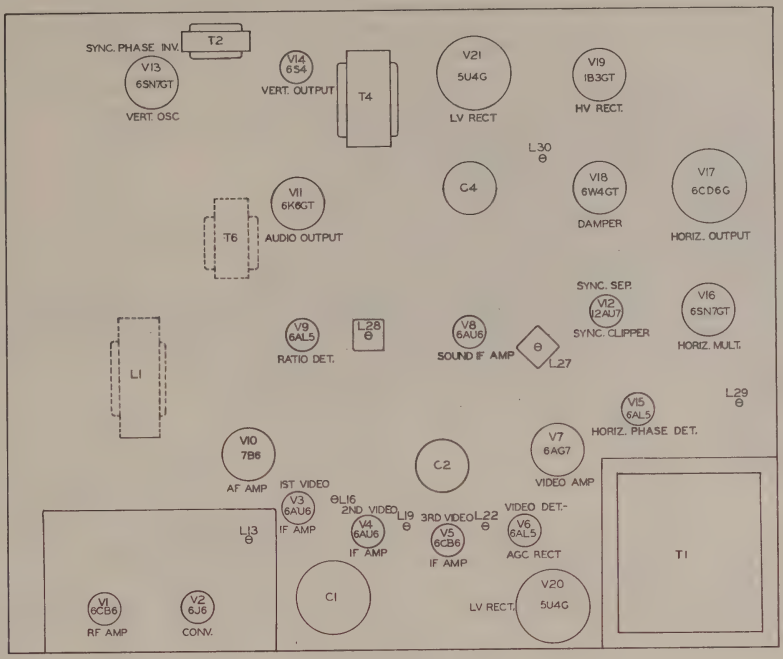


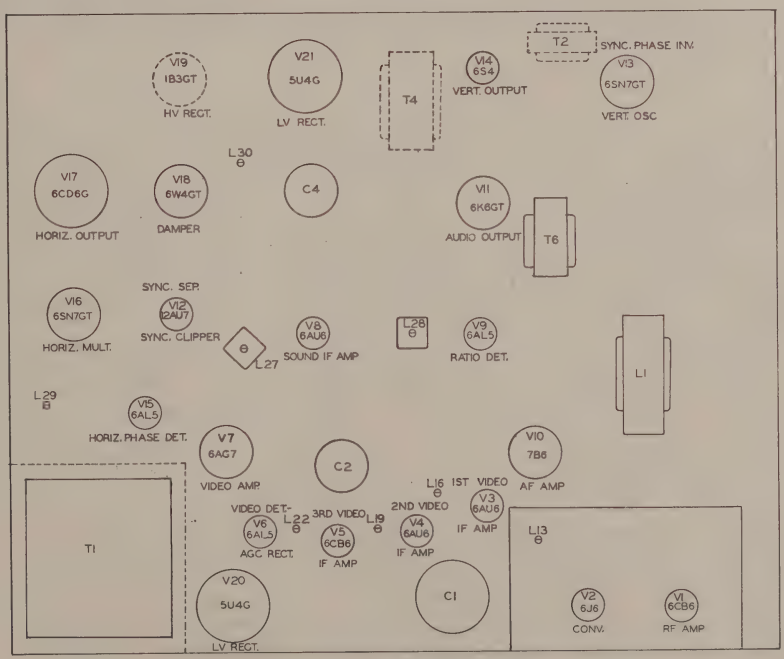

CHASSIS TOP VIEW




CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION




TOP VIEW




BOTTOM VIEW

# TUBE PLACEMENT CHART

# ALIGNMENT INSTRUCTIONS

**ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT**

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator to disable the high voltage.

**VIDEO IF ALIGNMENT**

Remove the converter tube, (V2), and replace it with a 6J6 which has pin 1 removed, this will disable the local oscillator and eliminate the possibility of erroneous indications.

In some versions of this chassis, R27 is not connected to chassis. In that event connect the VTVM across R27 and avoid grounding the VTVM case.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 1. | Direct | High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis. | 23.4MC (Unmod.) | Any | DC probe to Point Ⓐ. Common to chassis. (See instructions above). | A1, A2 | Adjust for maximum deflection. |
| 2. | " | " | 25.7MC | " | " | A3, A4 | " |

**OVERALL VIDEO IF RESPONSE CHECK**

Connect the synchronized sweep voltage from the signal generator to the horizontal input of the oscilloscope for horizontal deflection.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 3. | Direct | High side to an ungrounded tube shield floating over dummy converter tube, (V2). Low side to chassis. | 24MC (10MC SWP) | 21.6MC 23.8MC 26.1MC | Any | Vert. amp. to Point Ⓐ. Low side to chassis. | | Check for response curve similar to figure 1. If necessary retouch A1 thru A4 for proper response. |

**SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM**

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 4. | .005MFD | High side to Pin 4 (grid) of 6AC7, (V7). Low side to chassis. | 4.5MC (Unmod.) | Any | DC probe to Point Ⓑ. Common to chassis. | A5, A6, A7 | Adjust for maximum deflection. |
| 5. | " | " | " | " | DC probe to Point Ⓒ. Common to Point Ⓓ. | A8 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. |

**SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE**

Use frequency modulated signal with 60 ∿ modulation and 450KC sweep. Use 120 ∿ sawtooth voltage in scope for horizontal deflection.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 4. | .005MFD | High side to Pin 4 (grid) of 6AC7, (V7). Low side to chassis. | 4.5MC (450KC SWP) | 4.5MC | Any | Vert. amp. to Point Ⓑ. Low side to chassis. | A5, A6, A7 | Disconnect stabilizer capacitor C5. Adjust for maximum amplitude and symmetry as per figure 2. |
| 5. | " | " | " | " | " | Vert. amp. to Point Ⓒ. Low side to chassis. | A8 | Reconnect capacitor C5. Adjust A8 so 4.5MC occurs at center of crossover lines as per figure 2. SLIGHTLY retouch A7 for maximum amplitude and straightness of crossover lines. |

THE TUNER PORTION OF THIS RECEIVER HAS BEEN PROPERLY ALIGNED AT THE FACTORY AND IS VERY STABLE. ALIGNMENT OF THIS PORTION SHOULD NOT BE NECESSARY IN THE FIELD.

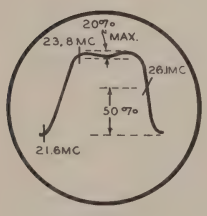


FIG. 1

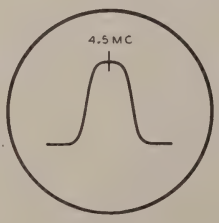


FIG. 2

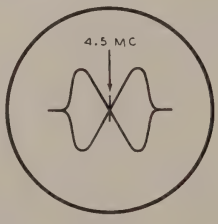
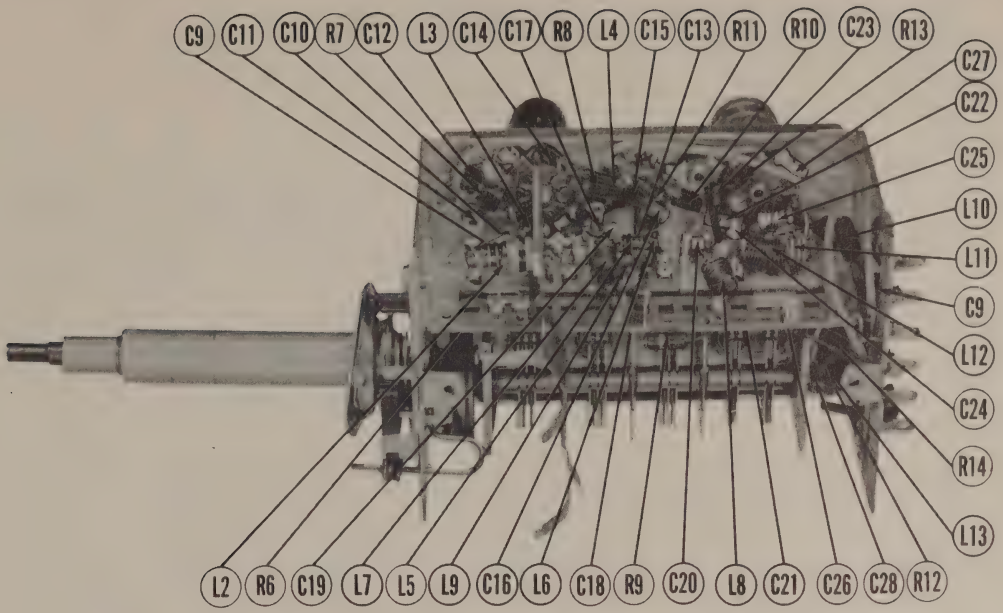
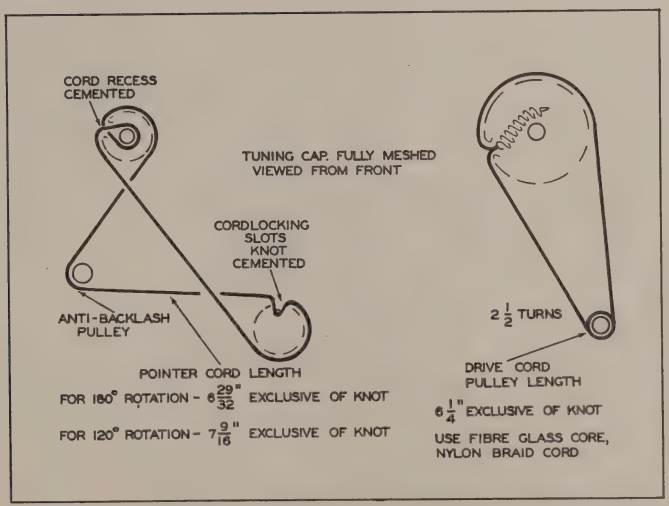


FIG. 3




RF TUNER


CORD RECESS CEMENTED
TUNING CAP. FULLY MESHED VIEWED FROM FRONT
CORDLOCKING SLOTS KNOT CEMENTED
ANTI-BACKLASH PULLEY
POINTER CORD LENGTH
FOR 180° ROTATION - 6 29/32" EXCLUSIVE OF KNOT
FOR 120° ROTATION - 7 9/16" EXCLUSIVE OF KNOT
2 1/2 TURNS
DRIVE CORD PULLEY LENGTH
6 1/4" EXCLUSIVE OF KNOT
USE FIBRE GLASS CORE, NYLON BRAID CORD

DRIVE CORD STRINGING

# VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6CB6 | -.6VDC | 0V | 0V | 6.3VAC | 100VDC | 85VDC | 0V | | |
| V 2 | 6J6 | 70VDC | 70VDC | 6.3VAC | 0V | 2.6VDC | §-4.4VDC | 0V | | |
| V 3 | 6AU6 | -.5VDC | 0V | 6.3VAC | 0V | 100VDC | 100VDC | .5VDC | | |
| V 4 | 6AU6 | -.5VDC | 0V | 6.3VAC | 0V | 100VDC | 100VDC | .5VDC | | |
| V 5 | 6CB6 | 0V | 1.3VDC | 6.3VAC | 0V | 105VDC | 75VDC | 0V | | |
| V 6 | 6AL5 | 0V | -.8VDC | 6.3VAC | 0V | 0V | 0V | -.3VDC | | |
| V 7 | 6AG7 | 0V | 0V | 0V | -.4VDC | 7VDC | 160VDC | 6.3VAC | 235VDC | |
| V 8 | 6AU6 | -.6VDC | 0V | 6.3VAC | 0V | 80VDC | 80VDC | 0V | | |
| V 9 | 6AL5 | -.1VDC | -.1VDC | 6.3VAC | 0V | 0V | 0V | -.2VDC | | |
| V 10 | 7B6 | 6.3VAC | 65VDC | -.9VDC | 0V | 0V | 0V | 0V | 0V | |
| V 11 | 6K6GT | 0V | 6.3VAC | 250VDC | 260VDC | 0V | 0V | 0V | 20VDC | |
| V 12 | 12AU7 | 20VDC | -1.2VDC | 0V | 0V | 0V | 50VDC | -.8VDC | 0V | 6.3VAC |
| V 13 | 6SN7GT | .5VDC | 110VDC | 25VDC | -4.5VDC<br>-15VDC | 175VDC<br>65VDC | 0V | 0V | 6.3VAC | |
| V 14 | 6S4 | 0V | 35VDC<br>8VDC | 0V | 6.3VAC | 0V | 0V | 0V | 0V | 470VDC<br>330VDC |
| V 15 | 6AL5 | 4VDC | -3.2VDC | 6.3VAC | 0V | .2VDC | 0V | .2VDC | | |
| V 16 | 6SN7GT | .9VDC | 300VDC | 12VDC | -6.5VDC | 155VDC | 12VDC | 0V | 6.3VAC | |
| V 17 | 6CD6G | 0V | 6.3VAC | 13VDC | -5VDC | -5VDC | 0V | 0V | 125VDC | Top Cap * |
| V 18 | 6W4GT | 0V | 0V | 515VDC | 320VDC | 310VDC | 320VDC | ¶ | ¶ | |
| V 19 | 1B3GT | * DO NOT MEASURE | | | | | | | | |
| V 20 | 5U4G | 0V | 400VDC | 0V | 370VAC | 0V | 370VAC | 0V | 400VDC | |
| V 21 | 5U4G | 0V | 400VDC | 0V | 370VAC | 0V | 370VAC | 0V | 400VDC | |
| V 22 | 17BP4A | 0V | 0V | PIN 10<br>515VDC | PIN 11<br>95VDC | PIN 12<br>6.3VAC | | | | |

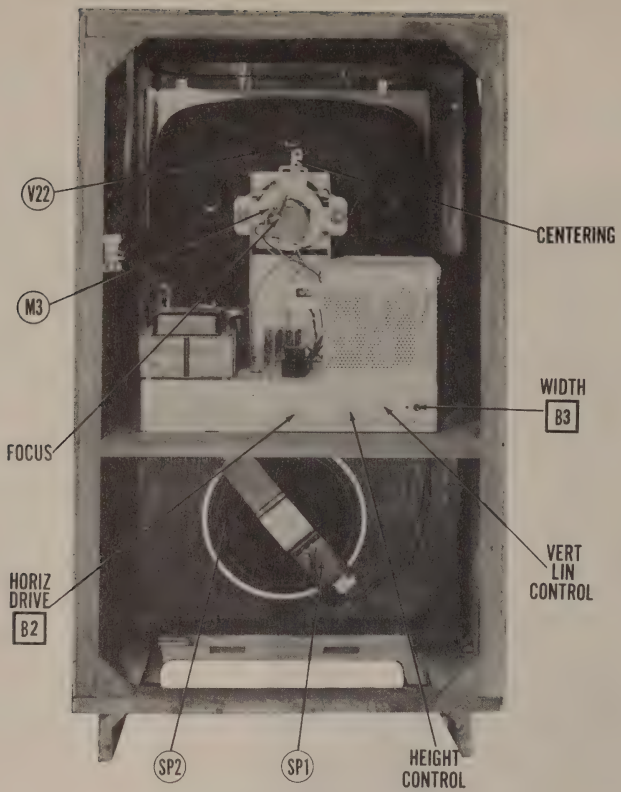
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
§ TAKEN WITH VACUUM TUBE VOLTMETER
¶ 6.3VAC MEASURED ACROSS FILAMENTS
* DO NOT MEASURE

RESISTANCE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6CB6 | 1.7Meg | 0Ω | 0Ω | .1Ω | †4KΩ | †11KΩ | 0Ω | | |
| V 2 | 6J6 | †15KΩ | †11KΩ | .1Ω | 0Ω | 110KΩ | 22KΩ | 0Ω | | |
| V 3 | 6AU6 | 1.7Meg | 0Ω | .1Ω | 0Ω | †3.9KΩ | †3.9KΩ | 82Ω | | |
| V 4 | 6AU6 | 1.7Meg | 0Ω | .1Ω | 0Ω | †3.8KΩ | †3.8KΩ | 82Ω | | |
| V 5 | 6CB6 | .2Ω | 120Ω | .1Ω | 0Ω | †3.7KΩ | †14KΩ | 0Ω | | |
| V 6 | 6AL5 | .2Ω | 680KΩ | .1Ω | 0Ω | 0Ω | 0Ω | 8.2KΩ | | |
| V 7 | 6AG7 | 0Ω | 0Ω | 0Ω | 8.2KΩ | 750Ω | †16KΩ | .1Ω | †6KΩ | |
| V 8 | 6AU6 | 47KΩ | 0Ω | .1Ω | 0Ω | †9.3KΩ | †9.3KΩ | 0Ω | | |
| V 9 | 6AL5 | Inf. | Inf. | .1Ω | 0Ω | 0Ω | 0Ω | 45KΩ | | |
| V 10 | 7B6 | .1Ω | †225KΩ | 10Meg | 0Ω | Inf. | Inf. | 0Ω | 0Ω | |
| V 11 | 6K6GT | Inf. | .1Ω | †1.9KΩ | †1.5KΩ | 470KΩ | Inf. | 0Ω | 680Ω | |
| V 12 | 12AU7 | †18KΩ | 1.8Meg | 0Ω | 0Ω | 0Ω | †40KΩ | 1.8Meg | 0Ω | .1Ω |
| V 13 | 6SN7GT | 6.8Meg | †5.8KΩ | 15KΩ | 1.5Meg | #1.2Meg<br>#2.3Meg | 0Ω | 0Ω | .1Ω | |
| V 14 | 6S4 | Inf. | 5.3KΩ<br>330Ω | 2.2Meg | .1Ω | 0Ω | 2.2Meg | Inf. | Inf. | #5.5KΩ |
| V 15 | 6AL5 | 4.8Meg | 4.8Meg | .1Ω | 0Ω | 6.8KΩ | 0Ω | 6.8KΩ | | |
| V 16 | 6SN7GT | 5.2Meg | #20KΩ | 1.2KΩ | 100KΩ | #165KΩ | 1.2KΩ | 0Ω | .1Ω | |
| V 17 | 6CD6G | Inf. | .1Ω | 100Ω | 470KΩ | 470KΩ | Inf. | 0Ω | †18KΩ | Top Cap #38Ω |
| V 18 | 6W4GT | Inf. | Inf. | 100KΩ | †565Ω | †570Ω | †565Ω | Inf. | Inf. | |
| V 19 | 1B3GT | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Top Cap #285Ω |
| V 20 | 5U4G | Inf. | 15KΩ | Inf. | 22Ω | Inf. | 22Ω | Inf. | 15KΩ | |
| V 21 | 5U4G | Inf. | 15KΩ | Inf. | 22Ω | Inf. | 22Ω | Inf. | 15KΩ | |
| V 22 | 17BP4A | 0Ω | 0Ω | PIN 10<br>#3.7Ω | PIN 11<br>225KΩ | PIN 12<br>.1Ω | | | | |

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED
† MEASURED FROM PIN 2 OF V20
# MEASURED FROM PIN 3 OF V18

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.




CABINET–REAR VIEW

## HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal frequency slug, (B1), until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer, (B2), counter clockwise as far as possible without crowding the right half of the picture.

Adjust the width slug, (B3), until the picture fills the mask horizontally.

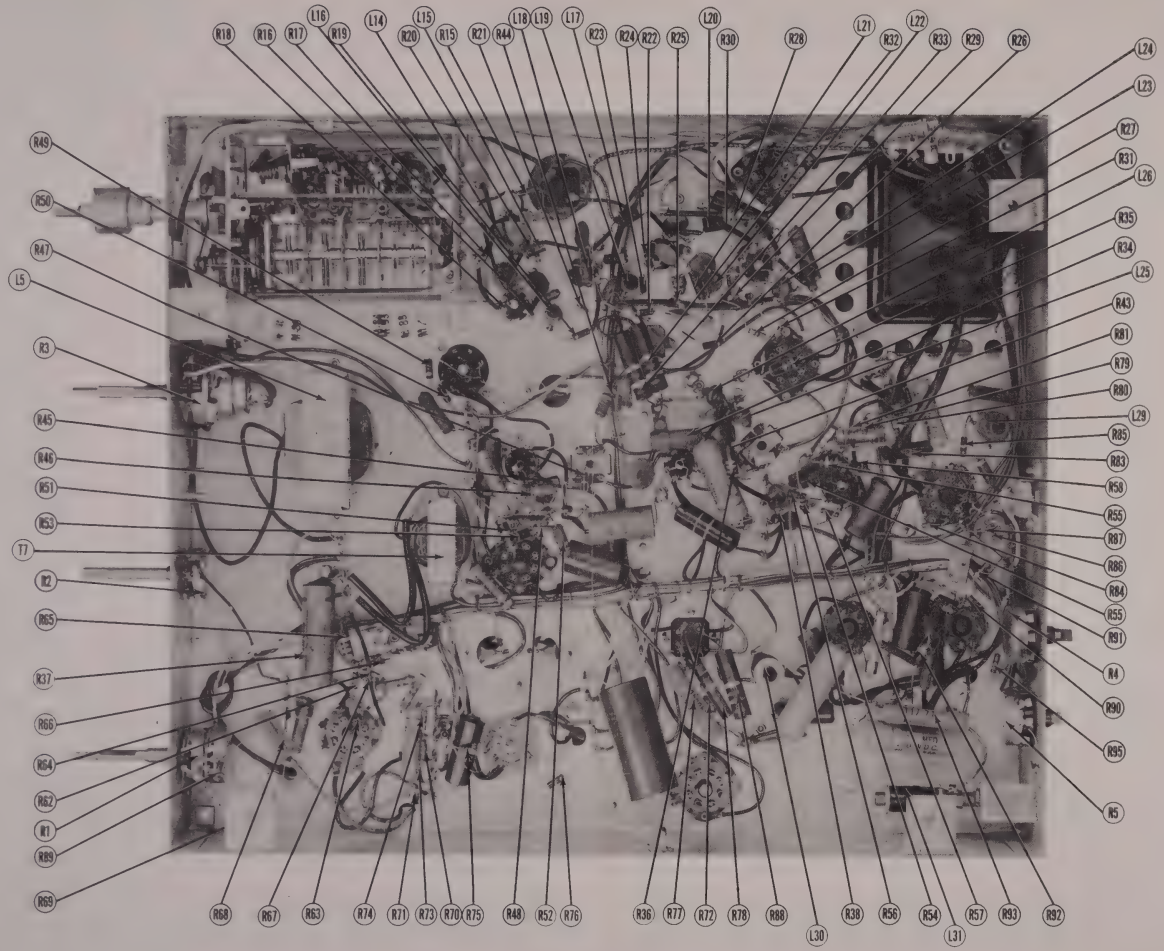
Adjust the horizontal linearity slug, (B4), until the picture is symmetrical from left to right.

Readjustment of B2 may be necessary to obtain optimum linearity.

## DISASSEMBLY INSTRUCTIONS

1. Remove eight push-on type control knobs.
2. Remove seven wood screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Remove antenna terminal strip.
5. Disconnect speaker.
6. Remove four hex head bolts from chassis. Remove chassis.
7. Remove one wood screw, and one hex nut from speaker. Remove speaker.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.




CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA: FADA PART No. | REPLACEMENT DATA: STANDARD REPLACEMENT | RMA BASE TYPE | NOTES |
|---|---|---|---|---|---|
| V1A | RF Amplifier | 6CB6 | 6CB6 | 6CK | |
| B | RF Amplifier | 6AK5 | 6AK5 | 7BD | |
| V2 | Converter | 6J8 | 6J8 | 7BF | |
| V3 | 1st. Video IF Amp. | 6AU6 | 6AU6 | 7BK | |
| V4 | 2nd Video IF Amp. | 6AU6 | 6AU6 | 7BK | |
| V5A | 3rd Video IF Amp. | 6CB6 | 6CB6 | 7BK | |
| B | 3rd Video IF Amp. | 6AU6 | 6AU6 | 7BK | |
| C | 3rd. Video IF Amp. | 6AG5 | 6AG5 | 7BD | |
| D | 3rd. Video IFAmp. | 6BC5 | 6BC5 | 7BD | |
| V6 | Video Detector-AGC Rectifier | 6AL5 | 6AL5 | 6BT | |
| V7 | Video Amplifier | 6AG7 | 6AG7 | 8Y | |
| V8 | Sound IF Amp. | 6AU6 | 6AU6 | 7BK | |
| V9A | Ratio Detector | 6AL5 | 6AL5 | 6BT | |
| B | Ratio Detector-AF Amplifier | 6T8 | 6T8 | 9E | |
| V10A | AF Amplifier | 7B8 | 7B8 | 8W | |
| B | AF Amplifier | 6A T8 | 6A T8 | 9BT | |
| V11 | Audio Output | 6K6GT | 6K6GT | 7S | |
| V12 | Sync. Separator-Sync. Clipper | 12AU7 | 12AU7 | 9A | |
| V13A | Sync. Inv. - Vert. Oscillator | 6SN7GT | 6SN7GT | 8BD | |
| B | Vert. Oscillator | 6J5 | 6J5 | 6Q | |
| V14 | Vert. Output | 6S4 | 6S4 | 9AC | |
| V15 | Horiz. Phase Det | 6AL5 | 6AL5 | 6BT | |
| V16 | Horiz. Mult. | 6SN7GT | 6SN7GT | 8BD | |
| V17 | Horiz. Output | 6CD6G | 6CD6G | 9CD | |
| V18 | Damper | 6W4GT | 6W4GT | 4CG | |
| C19 | HV Rectifier | 1B3GT | 1B3GT | 3C | |
| C20 | LV Rectifier | 5U4G | 5U4G | 5T | |
| V21 | LV Rectifier | 5U4G * | 5U4G | 5T | |
| V22A | Picture Tube | 17BP4A | 17BP4A | 12D | |
| B | Picture Tube | 17BP4 | 17BP4 | 12D | |
| C | Picture Tube | 16TP4 | 16TP4 | 12D | |
| D | Picture Tube | 16GP4 | 16GP4 | 12D | |
| E | Picture Tube | 16KP4 | 16KP4 | 12D | |
| F | Picture Tube | 16BP4 | 16BP4 | 12D | |
| G | Picture Tube | 19AP4 | 19AP4 | 12D | |

## CAPACITORS

**Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING: CAP. | RATING: VOLT | REPLACEMENT DATA: FADA PART No. | REPLACEMENT DATA: AEROVOX PART No. | REPLACEMENT DATA: CENTRALAB PART No. | REPLACEMENT DATA: CORNELL-DUBILIER PART No. | REPLACEMENT DATA: ERIE PART No. | REPLACEMENT DATA: SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C1A | 50 | 475 | 22.79 | AF88K | | UPT44150 | | TVL-3840 | ▲ Filter |
| B | 40 | 475 | | | | | | TVA-1602 | ▲ Filter |
| C2 | 40 | 450 | 22.82 | PRS450/40 | | BR4045A | | TVA-1712 | ▲ Filter |
| C3A | 30 | 450 | 22.80B | AF44266G | | | | TVL-2730 | ▲ Output Decoupling |
| B | 80 | 250 | | | | | | TVA-1504 | ■ Filter |
| C | 10 | 200 | | | | | | | ▲ V. Amp. Screen |
| C4A | 30 | 450 | 22.81 | AF842T20B | | UPT222 45V10 | | TVL-3780 | ▲ Vert. Output Dec. |
| B | 20 | 450 | | | | | | TVA-1310 | ■ Decoupling |
| C | 20 | 450 | | | | | | | ▲ Vert. Osc. Dec. |
| D | 100 | 50 | | | | | | | Vert. Output Cathode Stabilizing Cap. |
| C5 | 1 | 150 | 22.70 | PRS150/4 | | BR145 | | TVA-1300 | |
| C6 | 25 | 50 | 22.86 | PRS50/25 | | BR255A | | TVA-1303 | Output Cathode |
| C7 | 5 | 50 | 22.84 | PRS150/4 | | BR150 | | TVA-1303 | Vert. Output Cathode |
| C8 | 500 | 6 | 22.74 | | | | | | Bias Filter * |
| C9 | 39 | | | | | | N150K-29 | | Fixed Padder |
| C10 | 100 | | | SI100 | | D6-101 | GP1K-100 | 19C11 | RF Coupling |
| C11 | 1-3 | | | | | 829-3 | | | Variable Trimmer |
| C12 | 100 | | | BPD-001 | | D6-102 | | 801-001 | 19C1 | AGC Filter |
| C13 | 100 | | | BPD-0008 | | DD-801 | | 801-001 | 19C1 | RF Amp. Screen |
| C14 | 100 | | | BPD-0006 | | DD-801 | | 801-001 | 19C1 | RF Amp. Fil. |
| C15 | 100 | | | BPD-001 | | DD-102 | | 801-001 | 19C1 | RF Bypass |
| C16 | .01 | | | | | TCZ-.68 | | | | RF Coupling |
| C17 | 680 | | | SI100 | | D6-101 | | GP1K-100 | 19C11 | RF Coupling |
| C18 | 1-3 | | | | | 829-3 | | | | Variable Trimmer |
| C19 | 14.5 | | | | | | N90K-14.5 | | | Fixed Padder |
| C20 | 16.5 | | | | | | N90K-16.5 | | | Fixed Padder |
| C21 | 1-3 | | | | | 829-3 | | | | Variable Trimmer |
| C22 | 100 | | | SI100 | | D6-101 | | GP1K-100 | 19C11 | RF Coupling |
| C23 | 3.3 | | | SI3.3NP0 | | TCZ-3.3 | | N90K-3.3 | | Osc. Coupling |
| C24 | 33 | | | | | 829-33 | | GP1K-33 | 19C24 | Osc. Grid Cap. |
| C25 | 12.5 | | | | | | | N470K-12.5 | | Fixed Padder |
| C26 | 1-3 | | | | | 829-3 | | | | Variable Trimmer |
| C27 | 5 | | | SI5NP0 | | | | NP0K-5 | | Fixed Trimmer † |
| C28 | 33 | | | SI100 | | D6-101 | | GP1K-100 | 19C11 | IF Coupling |
| C29 | 680 | | | BPD-001 | | DD-801 | | 801-001 | 19C1 | Filament Bypass |
| C30 | 5000 | | 17.44 | BPD-005 | | DD-502 | D5D5 | 801-005 | 29C1 | AGC Filter |
| C31 | 5000 | | 17.44 | BPD-005 | | DD-502 | D5D5 | 801-005 | 29C1 | 1st. V. If Dec. |
| C32 | 5000 | | 17.44 | BPD-005 | | DD-502 | D5D5 | 801-005 | 29C1 | 1st. V. If Fil. |
| C33 | 120 | | 17.106 | SI120 | | D6-121 | SW5T15 | GP2K-120 | 19C29 | IF Coupling |
| C34 | 5000 | | 17.44 | BPD-005 | | DD-502 | D5D5 | 801-005 | 29C1 | 2nd. V. IF Dec. |
| C35 | 5000 | | 17.44 | BPD-005 | | DD-502 | D5D5 | 801-005 | 29C1 | 2nd. V. IF Fil. |
| C36 | .1 | 200 | 12.00 | P288-1 | | DF-104 | PTE4P1 | | 27M-P1 | AGC Filter |
| C37 | 120 | | 17.106 | SI120 | | D6-121 | SW5T15 | GP2K-120 | 19C29 | IF Coupling |
| C38 | 5000 | | 17.44 | BPD-005 | | DD-502 | D5D5 | 801-005 | 29C1 | 3rd. V. IF Dec. |
| C39 | 5000 | | 17.44 | BPD-005 | | DD-502 | D5D5 | 801-005 | 29C1 | 3rd. V. IF Cathode |
| C40 | 5000 | | 17.44 | BPD-005 | | DD-502 | D5D5 | 801-005 | 29C1 | 3rd. V. IF Fil. |
| C41 | 5000 | | 17.44 | BPD-005 | | DD-502 | D5D5 | 801-005 | 29C1 | 3rd. V. IF Screen |
| C42 | 120 | | 17.106 | SI120 | | D6-121 | SW5T15 | GP2K-120 | 19C29 | IF Coupling |
| C43 | 120 | | 17.106 | SI120 | | D6-121 | SW5T15 | GP2K-120 | 19C29 | IF Coupling |
| C44 | .01 | 400 | 12.72 | P488-01 | | D6-103 | PTE4S1 | 821-01 | 43M-S1 | DAGC. Decoupling |
| C45 | 5000 | | 17.44 | BPD-005 | | DD-502 | D5D5 | 801-005 | 29C1 | V. DET.-AGC Fil. |
| C46 | 5 | | 17.79 | SI5 | | TCZ-4.7 | SW5V5 | GP1K-5 | MS-55 | V. Diode Filter |
| C47 | 680 | | 17.108 | SI680 | | D6-681 | SW5T7 | GP2K-680 | 19C17 | V. Amp. Cathode |
| C48 | 470 | | 17.107 | SI470 | | D6-471 | SW5T5 | GP2K-470 | 19C15 | V. Amp. Cathode |
| C49 | .01 | 600 | 12.48 | P488-1 | | DF-104 | PTE4P1 | | 6TM-P1 | Video Coupling |
| C50 | .047 | 400 | 12.67 | P488-047 | | DF-503 | PTE4S5 | | 47M-S47 | Video Coupling * |
| C51 | .1 | 400 | 12.49 | P488-1 | | DF-104 | PTE4P1 | | 47M-P1 | Pic. Tube Grid. * † |
| C52 | .1 | | 17.59 | | | TCZ-2.2 | | | | S. IF Coupling * |
| C53 | 39 | | 17.105 | SI39 | | D6-390 | SW5Q4 | GP1K-39 | 1FM-44 | S. IF Coupling |
| C54 | 10000 | | 17.80 | BPD-01 | | DD-103 | PTE4S1 | 821-01 | 36C1 | S. IF Decoupling |

## CAPACITORS (CONT.)

| ITEM No. | RATING: CAP. | RATING: VOLT | REPLACEMENT DATA: FADA PART No. | REPLACEMENT DATA: AEROVOX PART No. | REPLACEMENT DATA: CENTRALAB PART No. | REPLACEMENT DATA: CORNELL-DUBILIER PART No. | REPLACEMENT DATA: ERIE PART No. | REPLACEMENT DATA: SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C55 | 330 | | 17.69 | SI330 | D6-331 | SW5T3 | GP2K-330 | 19C14 | Diode Load Cap. ‡ |
| C56 | .0039 | 400 | 12.71 | P688-004 | D6-402 | PTE6D4 | GP2M-004 | 6TM-D4 | De-emphasis |
| C57 | .01 | 400 | 12.72 | P488-01 | D6-103 | PTE4S1 | 821-01 | 43M-S1 | Audio Coupling |
| C58 | .0047 | 400 | 12.83 | P688-0047 | D6-472 | PTE6D5 | GP2M-0047 | 57M-D47 | Audio Coupling |
| C59 | .0047 | 400 | 12.83 | P488-02 | DF-203 | PTE4S2 | | 47M-S2 | Audio Coupling |
| C60 | .0047 | 600 | 12.68 | P688-047 | D6-472 | PTE6D6 | GP2M-0047 | 57M-D47 | Output Plate |
| C61 | .023 | 400 | 12.82 | P488-022 | DF-203 | PTE4S2 | | 47M-S23 | Sync. Coupling |
| C62 | .01 | 400 | 12.72 | P488-01 | D6-103 | PTE4S1 | 821-01 | 43M-S1 | Sync. Coupling * |
| C63 | .47 | 200 | 12.92 | P288-47 | | GT3P5 | | 27M-P47 | Decoupling * |
| C64A | 2000 | | # | P688-002 | | PTE6D2 | GP2M-002 | 6TM-D2 | Integrator Net |
| B | 5000 | | | P688-005 | JFC-100 | PTE6D5 | 81L-005 | 6TM-D5 | Integrator Net |
| C | 5000 | | | P688-005 | | PTE6D5 | 81L-005 | 6TM-D5 | Integrator Net |
| C65 | .0047 | 600 | 12.68 | P688-0047 | D6-472 | PTE6D5 | GP2M-0047 | 57M-D47 | Vert. Osc. Grid |
| C66 | .047 | 400 | 12.67 | P488-047 | | PTE4S5 | | 47M-S47 | Vert. Discharge |
| C67 | .1 | 400 | 12.75 | P488-1 | DF-104 | PTE4P1 | | 47M-P1 | Vert. Sweep Coupling |
| C68 | 1000 | | 17.109 | SI1000 | D6-102 | IW5D1 | GP2L-001 | 19C1 | Hor. Sync. Coupling |
| C69 | 1000 | | 17.109 | SI1000 | D6-102 | IW5D1 | GP2L-001 | 19C1 | Hor. Sync. Coupling |
| C70 | .01 | 400 | 12.72 | P488-01 | D6-103 | PTE4S1 | 821-01 | 43M-S1 | Integrator Net |
| C71 | .0047 | 400 | 12.68 | P688-0047 | D6-472 | PTE6D5 | GP2M-0047 | 57M-D47 | AFC Filter |
| C72 | .047 | 400 | 12.67 | P488-047 | DF-503 | PTE4S5 | | 47M-S47 | AFC Filter |
| C73 | .01 | | 17.69 | SI330 | D6-331 | SW5T3 | GP2K-330 | 19C14 | Hor. MV Feedback |
| C74 | 3900 | 500 | | 1464-004 | | IDR5D4 | | MS-34 | Fixed Trimmer |
| C75 | 390 | 500 | 17.38 | 1459-0004 | D6-391 | 5RS74 | GP2K-390 | MS-34 | Hor. Discharge ¶ |
| C76 | 270 | 500 | 17.123 | SI270 | D6-271 | 5W5T3 | GP2K-270 | 19C31 | Hor. Sweep Coupling |
| C77 | 20 | 1500 | 17.124 | | | | | | Hor. Feedback † |
| C78 | 20 | 1500 | 17.124 | | | | | | Hor. Feedback † |
| C79 | .047 | 600 | 12.66 | P688-047 | DF-503 | PTE6S5 | | 67M-S47 | Hor. Output Screen |
| C80 | .003 | 400 | 12.94 | P688-03 | | PTE6S3 | | 67M-S3 | Damper Filter |
| C81 | .047 | 400 | 12.67 | P488-047 | | PTE4S5 | | 47M-S47 | Damper Filter |
| C82 | .22 | 400 | 12.77 | P488-22 | | GT4P25 | | 47M-P22 | Damper Filter |
| C83 | .22 | 400 | 12.77 | P488-22 | | GT4P25 | | 47M-P22 | Hor. Sweep Coupling |
| C84 | 500 | 2000 | 17.116 | HV20B | TV2-502 | | | | R. V. Filter |
| C85 | .047 | 600 | 12.72 | P488-02 | D6-103 | PTE4S1 | 821-01 | 47M-S1 | Line Filter |
| C86 | .01 | 400 | 12.72 | P488-01 | D6-103 | PTE4S1 | 821-01 | 47M-S1 | Line Filter |
| C87 | 82 | | | SI82 | TCZ-82 | | GP1K-82 | | Hor. MV Grid * |
| C88 | 50 | | 17.18 | SI50 | D6-500 | 5W5Q5 | GP1K-50 | 19C28 | Line Ant. Coupling * |
| C89 | 50 | | 17.18 | SI50 | D6-500 | 5W5Q5 | GP1K-50 | 19C28 | Line Ant. Coupling * |
| C90 | 10 | 200 | 17.49 | P288-1 | DF-104 | PTE4P1 | | 27M-P1 | Line Ant. Coupling * |
| C91 | .05 | 400 | 12.69 | P488-05 | DF-503 | PTE4S5 | | 47M-S5 | Hor. Feedback * |
| C92 | .5 | | 17.79 | | | | | | Fixed Trimmer * |

* Not used in all models.
† Some models use 10MMF in this application.
‡ Some models use this Capacitor as a Pic. Tube Cathode Bypass.
§ Some models use 620MMF in this application; Mfgrs. Part No. 17.125.
▲ Some models use 120MMF in this application.
# Items C64A, C64B, C64C, R68A, and R68C are combined into one unit.
¶ Some models use 270MMF in this application.

## CONTROLS

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: FADA PART No. | REPLACEMENT DATA: IRC PART No. | REPLACEMENT DATA: CLAROSTAT PART No. | REPLACEMENT DATA: CENTRALAB PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| R1A | 1Meg | ½ | 52.66 | Concentrikit B11-137 Ø | RTV-110 | SBB-510 | Vert. Hold Control - Front |
| B | 50KΩ | ½ | | B11-123 Ø | | | Horiz. Hold Control - Rear |
| C | Shaft End | | | E-137 Ø | | | Attach per instructions in CONCENTRIKIT |
| R2A | 500Ω | 1 | 52.20 | Q11-123 | AM-44-S | B-31 | Brightness Control - See Note 1 |
| B | Shaft | | Not Reg | Not Reg | F8-3 | Not Reg | Attach to R2A per instructions |
| R2A | 2200Ω | 4 | 52.62 | | RTV-111 | | Focus Control - Wire Wound - Front } See Note 2 |
| B | 50KΩ | ½ | | | | | Brightness Control - Rear |
| R3A | 750Ω | 2 | 53.64 | | RTV-109 | | Contrast Control - Wire Wound - Front |
| B | 500KΩ | ½ | | | | | Volume Control and SW - Rear |
| R4A | 2.5Meg | ½ | 52.24 | Q11-239 | AM-84-S | AN-83 | Height Control |
| B | Shaft | | Not Reg | Not Reg | FKS-1/4 | AK-1 | Attach to R4A per instructions |
| R5 | 5000Ω | 1 | 52.68 | W-5000 | 43-5000 | VK-135 | Vert. Linearity Control - Wire Wound |

Ø Additional parts to be used with CONCENTRIKIT
Note 1 Used only when Focus Magnet is employed.
Note 2 Used only when Focus Coil is employed.

## RESISTORS

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: FADA PART No. | REPLACEMENT DATA: IRC PART No. | IDENTIFICATION CODES ALL RESISTORS ± 10% UNLESS OTHERWISE SPECIFIED |
|---|---|---|---|---|---|
| R6 | 1500Ω | ½ | | BTS-1500 | Antenna Coil Shunt |
| R7 | 10KΩ | ½ | | BTS-10K | RF Amp. Grid |
| R8 | 6800Ω | 20% ½ | | BTS-6800 | RF Amp. Screen |
| R9 | 6Ω | 20% ½ | | | Parasitic Suppressor |
| R10 | 10KΩ | ½ | | BTS-10K | Mixer Grid |
| R11 | 100KΩ | 20% ½ | | BTS-100K | Mixer Grid |
| R12 | 6800Ω | 20% ½ | | BTS-6800 | Mixer Plate |
| R13 | 22KΩ | 20% ½ | | | Osc. Grid |
| R14 | 10KΩ | ½ | | BTS-10K | Osc. Plate |
| R15 | 330Ω | 1 | 32.67 | BTS-330 | AGC Network |
| R16 | 100Ω | 1 | 32.3 | BTS-100 | Decoupling |
| R17 | 15KΩ | 20% ½ | 32.12 | | 1st. Video IF Amp. Grid |
| R18 | 82Ω | 1 | 32.125 | BTS-82 | 1st. Video IF Amp. Cathode |
| R19 | 100Ω | 1 | 32.2 | BTS-100 | Decoupling |
| R20 | 8200Ω | 1 | 32.77 | BTS-8200 | 2nd. Video IF Amp. Grid |
| R21 | 82Ω | 1 | 32.125 | BTS-82 | 2nd. Video IF Amp. Cathode |
| R22 | 100Ω | 1 | 32.2 | BTS-100 | Decoupling |
| R23 | 8200Ω | 1 | 32.77 | | 3rd. Video IF Transformer Shunt |
| R24 | 120Ω | 1 | 32.118 | BTS-120 | 3rd. Video IF Amp. Cathode - See Note 4 |
| R25 | 10KΩ | 1 | 32.11 | BTS-10K | 3rd. Video IF Amp. Screen - See Note 3 |
| R26 | 100Ω | 1 | 32.2 | BTS-100 | Decoupling |
| R27 | 8200Ω | ½ | 32.77 | BTS-8200 | Video Det. Diode Load |
| R28 | 39KΩ | 1 | 32.103 | BTS-39K | Voltage Divider |
| R29 | 680KΩ | 1 | 32.35 | BTS-680K | AGC Diode Load |
| R30 | 1Meg | 1 | 32.33 | BTS-1Meg | AGC Network |
| R31 | 82Ω | 1 | 32.125 | BTS-82 | Parasitic Suppressor - See Note 5 |
| R32 | 39KΩ | 2 | 32.660 | BTS-39K | Video Amp. Screen |
| R33 | 39KΩ | 2 | 32.660 | BTS-39K | Video Amp. Screen |
| R34 | 5000Ω | 10 | 117.70 | 1 3/4A-5000 | Video Amp. Plate - Wire Wound |
| R35 | 39KΩ | 1 | 32.103 | BTS-39K | Voltage Divider |
| R36 | 470KΩ | 1 | | BTS-470K | Isolation - See Note 3 |
| R37 | 22KΩ | 1 | 32.13 | BTS-22K | Voltage Divider |
| R38 | 330KΩ | ½ | | BTS-330K | Picture Tube Cathode - See Note 6 |

## RESISTORS (CONT.)

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: FADA PART No. | REPLACEMENT DATA: IRC PART No. | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| R39 | 33KΩ | ½ | 32.14 | BTS-33K | Voltage Divider - See Note 3 |
| R40 | 270KΩ | ½ | 32.44 | BTS-270K | DC Resistor-Diode Load - See Note 3 |
| R41 | 2200Ω | ½ | 32.60 | BTS-2200 | Picture Tube Grid - See Note 3 |
| R42 | 1000Ω | ½ | 33.8 | BTS-1000 | Bias Network - See Note 3 |
| R43 | 47KΩ | ½ | 33.15 | BTS-47K | Sound IF Amp. Grid |
| R44 | 4700Ω | 1 | 32.74 | BTA-4700 | Sound IF Amp. Decoupling |
| R45 | 22KΩ | 1 | 33.13 | BTA-22K | Ratio Det. Diode Load |
| R46 | 22KΩ | 1 | 32.13 | BTA-22K | Ratio Det. Diode Load |
| R47 | 330Ω | ½ | 32.07 | BTS-330 | Balancing - See Note 3 |
| R48 | 15KΩ | ½ | 33.12 | BTS-15K | De-emphasis |
| R49 | 39Meg | ½ | 32.99 | BTS-39Meg | AF Amp. Grid |
| R50 | 220KΩ | ½ | 32.18 | BTS-220K | AF Amp. Plate |
| R51 | 470KΩ | ½ | 32.92 | BTS-470K | Output Grid |
| R52 | 680Ω | ½ | 32.115 | BTA-680 | Output Cathode |
| R53 | 470Ω | 1 | 32.399 | BTS-470 | Output Decoupling |
| R54 | 47KΩ 20% | ½ | 32.15 | BTS-47K | Sync. Sep.-Clipper Plate - See Note 7 |
| R55 | 1.8Meg 20% | ½ | 32.208 | BTS-1.8Meg | Sync. Sep.-Clipper Grid - See Note 3 |
| R56 | 33KΩ 20% | ½ | 32.14 | BTS-33K | Isolation - See Note 3 |
| R57 | 10KΩ | ½ | 32.11 | BTS-10K | Voltage Divider - See Note 8 |
| R59 | 1.8Meg 20% | ½ | 32.208 | BTS-1.8Meg | Sync. Sep. Grid - See Note 9 |
| R59 | 39KΩ | ½ | 32.103 | BTS-39K | Sync. Sep. Plate - See Note 14 |
| R60 | 5600Ω | ½ | 32.126 | BTS-5600 | Sync. Sep. Plate - See Note 3 |
| R61 | 3900Ω | ½ | 32.202 | BTS-3900 | Sync. Amp.-Sep. Cathode - See Note 3 |
| R62 | 6.8Meg | ½ | 32.46 | BTS-6.8Meg | Sync. Phase Inv. Grid - See Note 3 |
| R63 | 1000Ω | ½ | 32.8 | BTS-1000 | Sync. Phase Inv. Cathode - See Note 3 |
| R64 | 2200Ω | ½ | 32.60 | BTS-2200 | Sync. Phase Inv. Plate - See Note 3 |
| R65 | 68KΩ | ½ | 32.411 | BTA-68K | Voltage Divider - See Note 3 |
| R66 | 10KΩ 20% | ½ | 32.143 | BTS-10K | Voltage Divider - See Note 3 |
| R67 | 2200Ω | ½ | 32.60 | BTS-2200 | Bias Network - See Note 3 |
| R68A | 22KΩ | ½ | # | BTS-22K | Integrator |
| B | 8200Ω | ½ | | BTS-8200 | Integrator |
| C | 8200Ω | ½ | | BTS-8200 | Integrator |
| R69 | 1.5Meg | ½ | 32.167 | BTS-1.5Meg | Vert. Osc. Grid |
| R70 | 47KΩ 20% | ½ | 32.15 | BTS-47K | Vert. Osc. Grid |
| R71 | 1Meg | ½ | 32.33 | BTS-1Meg | Vert. Osc. Plate |
| R72 | 150KΩ | ½ | 32.90 | BTS-150K | Vert. Osc. Decoupling - See Note 10 |
| R73 | 2.2Meg | ½ | 32.34 | BTS-2.2Meg | Voltage Divider |
| R74 | 8200Ω | ½ | 32.77 | BTS-8200 | Vert. Peaking - See Note 11 |
| R75 | 2.2Meg | ½ | 32.34 | BTS-2.2Meg | Vert. Output Grid |
| R76 | 330Ω | ½ | 32.07 | BTS-330 | Vert. Output Cathode |
| R77 | 7500Ω | 10 | | 1 3/4A-7500 | Vert. Output Decoupling - Wire Wound |
| R78 | 10KΩ | 2 | | BTS-10K | Vert. Output Decoupling - See Note 3 |
| R79 | 100KΩ | ½ | 32.89 | BTS-100K | Horiz. Phase Det. Diode Load |
| R80 | 100KΩ | ½ | 32.89 | BTS-100K | Horiz. Phase Det. Diode Load |
| R81 | 4.7Meg | ½ | 32.98 | BTS-4.7Meg | Horiz. Phase Det. Diode Load |
| R82 | 82KΩ | ½ | 32.85 | BTS-82K | Horiz. Phase Det. Diode Load - See Note 3 |
| R83 | 470KΩ | ½ | 32.92 | BTS-470K | Horiz. AFC Filter |
| R84 | 1200Ω | ½ | 32.283 | BTS-1200 | Horiz. MV Cathode - See Note 12 |
| R85 | 5600Ω | ½ | 33.126 | BTS-5600 | Horiz. MV Grid |
| R86 | 100KΩ | ½ | 32.89 | BTS-100K | Horiz. MV Grid |
| R87 | 33KΩ | ½ | 32.90 | BTS-33K | Horiz. MV Plate |
| R88 | 15KΩ | 3 | 32.855 | BTS-15K | Horiz. MV Decoupling |
| R89 | 47KΩ 20% | ½ | 33.15 | BTS-47K | Horiz. Hold Control Shunt |
| R90 | 100Ω | 2 | 33.2 | | Parasitic Suppressor |
| R91 | 470KΩ | ½ | 32.92 | BTS-470K | Horiz. Output Grid |
| R92 | 100Ω | 2 | 32.535 | BW-2-100 | Horiz. Output Cathode |
| R93 | 17.5KΩ | 10 | 117.71 | 1 3/4A-17.5K | Horiz. Output Screen - Wire Wound |
| R94 | 3900Ω | ½ | 32.202 | BTS-3900 | Horiz. Peaking - See Note 3 |
| R95 | 6800Ω 5% | ½ | 32.10 | BTS-6800-5% | Horiz. Feedback |
| R96 | 3.3Ω | 1 | 32.62 | BW-½-3.3 | HV Rectifier Filament - Wire Wound |
| R97 | 800Ω | | | | HV Filter - See Note 3 |
| R98 | 2500Ω | 25 | | 2 JDA-2500 | Filter - Wire Wound - See Note 13 |
| R99 | 500Ω | 20 | 117.74 | 2D-500 | Filter - Wire Wound |
| R100 | 500Ω | 20 | 117.74 | 2D-500 | Filter - Wire Wound |
| R101 | 500Ω | 20 | 117.74 | 2D-500 | Filter - Wire Wound |
| R102 | 1000Ω | 10 | 117.68 | 1 3/4A-1000 | Focus Coil Shunt - Wire Wound - See Note 3 |
| R103 | 680Ω | 4 | 117.67 | | Focus Coil Shunt - Wire Wound - See Note 3 |
| R104 | 68KΩ | 1 | 32.411 | BTA-68K | Voltage Divider - See Note 3 |
| R105 | 10Ω | 2 | 32.625 | BW-2-10 | Bias Network - See Note 3 |

# Items R68A, R68B, R68C, C64A, C64B, and C64C are combined into one unit.
Note 3 Not used in all models.
Note 4 Some models use 82Ω Resistor in this application.
Note 5 Some models use 120Ω Resistor in this application.
Note 6 Some models use 10KΩ Resistor in this application.
Note 7 Some models use 1.8Meg Resistor in this application.
Note 8 Some models use 220KΩ Resistor in this application.
Note 9 Some models use 3.9Meg Resistor in this application.
Note 10 Some models use 47KΩ Resistor in this application.
Note 11 Some models use 560Ω Resistor in this application.
Note 12 Some models use 1500Ω Resistor in this application.
Note 13 Some models use 1750Ω Resistor in this application.
Note 14 Some models use 3900Ω Resistor in this application.

## SPEAKER

| ITEM No. | RATINGS: FIELD RES. | RATINGS: V. C. IMP. | REPLACEMENT DATA: FADA PART No. | REPLACEMENT DATA: JENSEN PART No. | REPLACEMENT DATA: QUAM PART No. | NOTES |
|---|---|---|---|---|---|---|
| SP1A | PM | 3.7Ω | 107.47 ③ | 10J12 | 10A31 | ③ Used in models S1055, S1055X, & S6C55 |
| B | PM | 3.7Ω | 107.46 ④ | | | ④ Used in models S1060, S6T65 |
| | CONE DIA. | V. C. DIA. | | | | |
| SP2A | 9 1/4 | 1" | | | | |
| B | 5 7/8 | 9/16 | | | | |

## TRANSFORMER (POWER)

| ITEM No. | RATING: PRI. | RATING: SEC. 1 | RATING: SEC 2 | RATING: SEC. 3 | REPLACEMENT DATA: FADA PART No. | REPLACEMENT DATA: STANCOR PART No. | REPLACEMENT DATA: MERIT PART No. | REPLACEMENT DATA: CHICAGO PART No. |
|---|---|---|---|---|---|---|---|---|
| T1 | 117VAC @2.25 A | 760VCT @.250ADC | 5VAC ⑤ 6A | 6.3VAC ① 1.2A 6.3VAC ② 9.7A | 42.61 | | | TP-360 |

PARTS LIST CONTINUED ON PAGE 15

FADA MODELS S6C55, S6C70, S6T65, S7C70, S7T65, S9C10, S1055, S1055X, S1060, S1065

# PARTS LIST AND DESCRIPTIONS (Continued)

## TRANSFORMER (SWEEP CIRCUITS)

| ITEM No. | RATING DC RESISTANCE PRI. | SEC. | REPLACEMENT DATA FADA PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | NOTES |
|---|---|---|---|---|---|---|---|
| T2 | 200Ω | 1040Ω | 42.53 | A-8111 | A-3000 | TB0-1 ① | Vert. Block Osc. Trans. |
| T3 | 275Ω | .5Ω | 37.255 ② | | | | Horiz. Output Trans. |
| | Tap28.5Ω | SEC. 2 4Ω | 37.247 ③ | | | | |
| | | Tap 3.4Ω SEC. 3 0Ω | | | | | |
| T4 | 1060Ω | | 42.62 | A-8112 | A-3039 ① | | Vert. Output Trans. |
| | Tap12Ω | | | | | | Horiz. Deflection Coil |
| T5A | 12Ω | | 37.256 | DY-7 | MDF-70 | | Vert. Deflection Coil |
| B | 46.5Ω | | 37.249 ④ | | | | |
| T8 | 750Ω | | 37.251 ⑤ | | | | Focus Coil |

① Drill one new mounting hole.
② Used with rectangular tubes.
③ Used with round tubes.
④ May be used in early production models
⑤ Used in some models.

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING IMPEDANCE PRI. | SEC. | DC RES. PRI. | SEC. | REPLACEMENT DATA FADA PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| T7 | 4.5kΩ | 3.7Ω | 375Ω | .4Ω | 42.57 | A-3978 | A-3931 | RO-13 | ① Drill one new mounting hole |

## FILTER CHOKE

| ITEM No. | RATINGS TOTAL DIRECT CURRENT | D. C. RESISTANCE | INDUCTANCE @ CURRENT 1000 ~\| | REPLACEMENT DATA FADA PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| L1 | .250Amp. | 65Ω | 3.2Henries | 42.56 | C-3326 ① | C-2991 | TR3300① | ① Drill one new mounting hole. |

## COILS (RF-IF)

| ITEM No. | USE | DC RES. PRI. | SEC. | REPLACEMENT DATA FADA PART No. | MEISSNER PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|---|---|
| L2 | Ant. Coil | 0Ω | 0Ω | | | | Part of Tuner Part #42.64 |
| L3 | Ant. Coil | 0Ω | | | | | Part of Tuner Part #42.64 |
| L4 | RF Choke | .1Ω | | | | | Part of Tuner Part #42.64 |
| L5 | RF Coil Primary | 0Ω | | | | | High Band (Part of Tuner Part #42.64) |
| L6 | RF Coil Secondary | 0Ω | | | | | High Band (Part of Tuner Part #42.64) |
| L7 | RF Coil Primary | 0Ω | | | | | Low Band (Part of Tuner Part #42.64) |
| L8 | RF Coil Secondary | 0Ω | | | | | Low Band (Part of Tuner Part #42.64) |
| L9 | Band Pass Coil | 0Ω | | | | | Part of Tuner Part #42.64 |
| L10 | Fil. Choke | 0Ω | | | | | Part of Tuner Part #42.64 |
| L11 | Osc. Coil | 0Ω | | | | | High Band (Part of Tuner Part #42.64) |
| L12 | Osc. Coil | 0Ω | | | | | Low Band (Part of Tuner Part #42.64) |
| L13 | Int. Video IF | 1.1Ω | | | | | Part of Tuner Part #42.64 |
| L14 | Fil. Choke | 0Ω | | 37.89 | | | |
| L15 | Fil. Choke | 0Ω | | 37.89 | | | |
| L16 | 2nd. Video IF | .2Ω | | 37.99 | | | |
| L17 | Fil. Choke | 0Ω | | 37.89 | | | |
| L18 | RF Choke | 1.6Ω | | 37.197 | | | |
| L19 | 3rd. Video IF | .2Ω | | 37.99 | | | |
| L20 | Fil. Choke | 0Ω | | 37.89 | | | |
| L21 | RF Choke | 1.6Ω | | 37.197 | | | |
| L22 | 4th. Video IF | .2Ω | | 37.99 | | | |
| L23 | Peaking | 5Ω | | 37.234 | 19-1921 | | 120 Microhenries (Red Dot) |
| L24 | Peaking | 19Ω | | 37.235 | | | 600 Microhenries Blue-Yellow Dots |
| L25 | Peaking | 10Ω | | 37.236 | 19-1921 | | 190 Microhenries-Wound on 18KΩ Resistor (Blue-Green Dots) |
| L26 | Peaking | 11.5Ω | | 37.237 | 19-1922 | | 245 Microhenries (Blue-White Dots) |
| L27 | Sound IF | 2.2Ω | 2.2Ω | 37.252 | | | |
| L28 | Ratio Det. Trans. | 4.5Ω | 2.2Ω | 37.253 | | | |
| L29 | Horiz. Freq. | 50Ω | | 37.233 | | | Tap at 3.7Ω |
| L30 | Horiz. Lin. | 9Ω | | 37.250 | | | |
| L31 | Width Coil | 2.5Ω | | 37.248 | | | |
| L32 | Line Choke | | | 37.134 | | | Not Used in all Models |
| L33 | Line Choke | | | 37.134 | | | Not Used in all Models |

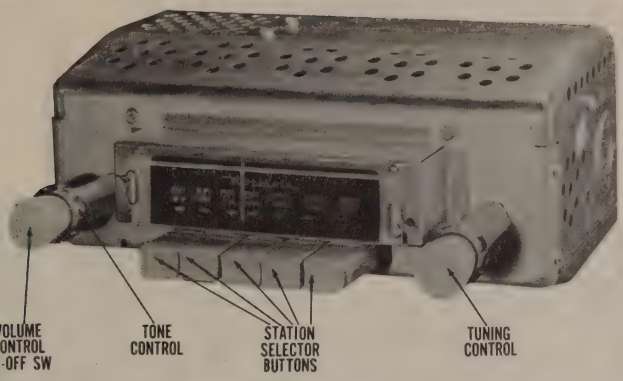
## FUSES

| ITEM No. | TYPE | RATING | REPLACEMENT DATA FADA PART No. FUSE | FADA PART No. HOLDER | LITTELFUSE PART No. FUSE | LITTELFUSE PART No. HOLDER | REMARKS |
|---|---|---|---|---|---|---|---|
| M1 | 3AG Pigtail | .250A | 122.32 | | 318.250 | | |

## MISCELLANEOUS

| ITEM No. | PART NAME | FADA PART No. | NOTES |
|---|---|---|---|
| M2A | RF Tuner | 42.64 | |
| B | RF Tuner | 42.55 | Alternate |
| M3 | Ion Trap | 112.23 | |
| M4 | Focus Magnet | 113.26 | Some Models use Focus Coil Part No. 37.251 (750Ω Resistance) |
| B2 | Trimmer | 132.18 | Horiz. Drive (25-280MMF) |
| | Safety Glass | 92.393 | Model S1055 |
| | Safety Glass | 92.396 | Model S1060 |
| | Safety Glass | 92.419 | Model S6T65 |
| | Mask | 97.345 | Models S1055, S6C55 |
| | Mask | 97.348 | Model S1060 |
| | Mask | 97.355 | Model S1065 |
| | Knob | 142.76 | Channel Selector |
| | Knob | 142.79 | Station Indicator |
| | Knob | 142.75 | Band Selector Assembly |
| | Knob | 142.78 | Inner |
| | Knob | 142.77 | Outer |

Models: S1055, S1055X, S6C55, S6T65, S7T65, S1060






MOTOROLA MODEL KR1

| | |
|---|---|
| TRADE NAME | Motorola, Chassis 1A |
| MANUFACTURER | Motorola Inc. 4545 Augusta Blvd., Chicago, Illinois |
| TYPE SET | Battery Operated Custom-Built Auto Superheterodyne Receiver |
| TUBES (SIX) | Types 6BA6 RF Amp., 6BE6 Converter, 6BA6 IF Amp., 6AT6 Det.-AVC-AF, 6AQ5 Power Output, 6X4 Rectifier. |
| POWER SUPPLY | 6 Volt Storage Battery RATING 6.6 Amp. @ 6.3 Volts DC |
| TUNING RANGE—BROADCAST | 540-1600KC |

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | RADIO DIAL SETTING | OUTPUT METER | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 1. | .1MFD | High side to Pin 7 (grid) of 6BE6 (V2). Low side to chassis. | 455KC (400 ∿ Mod.) | Tuning cores fully out. | Across voice coil. | A1, A2, A3, A4 | Adjust for maximum output. |
| 2. | Fig. 1 | High side thru dummy to antenna receptacle. Low side to chassis. | 1605KC | " | " | A5 | " |
| 3. | " | " | 1300KC | Tune for max. output | " | A6, A7 | " |
| | The following should be preformed only after a coil or tuning core has been replaced or tampered with. | | | | | | |
| 4. | " | " | 1605KC | Tuning cores fully out. | " | A5, A6, A7 | Adjust for maximum output. |
| 5. | " | " | 1300KC | Starting with cores fully out, turn tuning control until tuning core carriage moves 5/16" inward. | " | A8, A9, A10 | Adjust in order given for maximum output. |
| 6. | " | " | 1605KC | Tune for max. output | " | A5, A6, A7 | Adjust for maximum output. Repeat step 4. |
| | After set is installed fully extend antenna and tune in a weak station near 1400KC. Readjust A7 for maximum volume. | | | | | | |

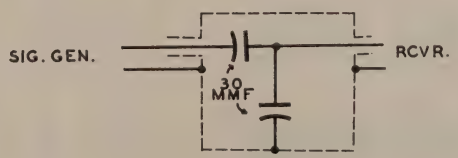



FIG. 1

HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

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# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA | | RMA BASE TYPE | INSTALLATION NOTES |
|---|---|---|---|---|---|
| | | MOTOROLA PART No. | STANDARD REPLACEMENT | | |
| V1 | RF Amplifier | 6BA6 | 6BA6 | 7BK | |
| V2 | Converter | 6BE6 | 6BE6 | 7CN | |
| V3 | IF Amplifier | 6BA6 | 6BA6 | 7BK | |
| V4 | Det. -AVC-AF | 6AT6 | 6AT6 | 7BT | |
| V5 | Power Output | 6AQ5 | 6AQ5 | 7BT | |
| V6 | Rectifier | 6X4 | 6X4 | 5BS | |

## CAPACITORS

**Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT | MOTOROLA PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | |
| C1A | 15 | 350 | 23A485677 | AF32H4A | | UP15S135C | | TVL-3630 | ■ Filter |
| B | 10 | 350 | | | | | | | ▲ Filter |
| C | 20 | 25 | | | | | | | Output Cathode |
| C2 | 90 | | 21A591682 | | | | | | Fixed Trimmer |
| C3 | .006 | 100 | 8A4529 | P688-006 | D6-562 | PTE6D6 | 811-005 | 6TM-D6 | RF Coupling |
| C4 | .05 | 100 | 8R13514 | P288-005 | DF-503 | PTE4S5 | | 2TM-S5 | AVC Filter |
| C5 | .1 | 400 | 8R13166 | P488-1 | DF-104 | PTE4P1 | | 4TM-P1 | Decoupling |
| C6 | 5 | | 21K70720 | 8I5 | TCZ-4.7 | 5W5V5 | GP1K-5 | MS-55 | RF Coupling |
| C7 | 50 | 500 | 21R6513 | 1468-00005 | D6-500 | 5W5Q5 | GP1K-50 | 1FM-45 | Osc. Grid Cap |
| C8 | 220 | | | | | | | | Fixed Trimmer |
| C9 | 5 | | 21K70720 | 8I5 | TCZ-4.7 | 5W5V5 | GP1K-5 | MS-55 | IF Coupling |
| C10 | .02 | 100 | 8R51209 | P488-02 | DF-203 | PTE4S2 | | 2TM-S2 | Tone Comp. |
| C11 | .01 | 100 | 8R472754 | P488-01 | D6-103 | PTE4S1 | 821-01 | 4TM-S1 | Audio Coupling |
| C12 | .01 | 400 | 8R23690 | P488-01 | D6-103 | PTE4S1 | 821-01 | 4TM-S1 | Audio Coupling |
| C13 | .006 | 400 | 8K71910 | P688-006 | D6-562 | PTE6D6 | 811-005 | 6TM-D6 | Tone Comp. |
| C14 | 500 | 500 | 21R6590 | 1468-0005 | D6-501 | 5W5T5 | GP2K-500 | 1FM-35 | Output Grid |
| C15 | .004 | 400 | 8K71909 | P688-004 | D6-402 | PTE6D4 | GP2M-004 | 6TM-D4 | Output Plate |
| C16 | .02 | 1000 | 8R490449 | P1088-02 | | PTE16S2 | | MB-S2 | Buffer |
| C17 | .5 | 100 | 8K17028 | P185-5 | | | | 68P20 | Hash Filter |
| C18 | .5 | 100 | 8K17028 | P185-5 | | | | 68P20 | Hash Filter |

## CONTROLS

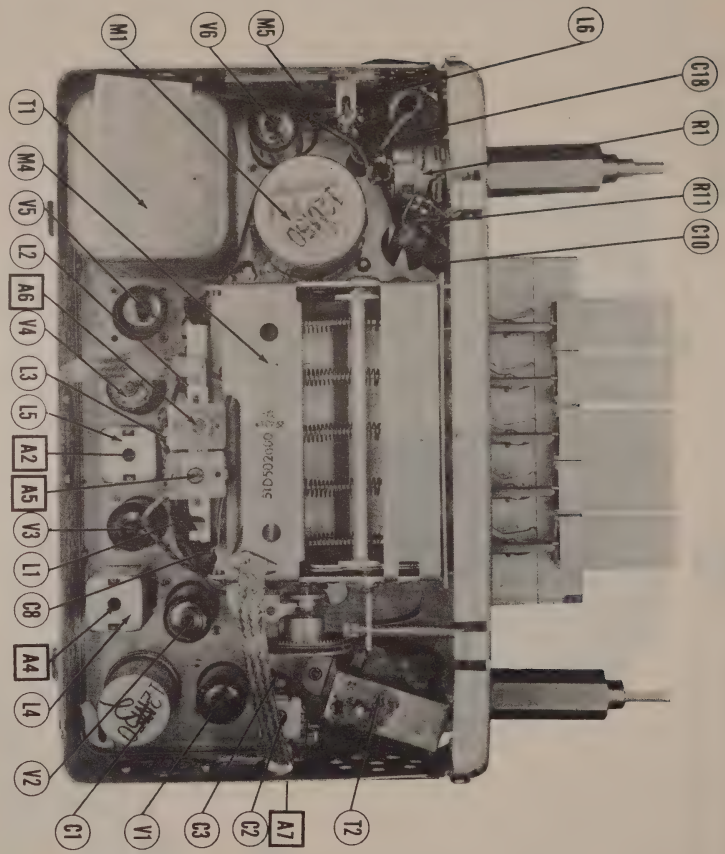
| ITEM No. | RATING | | REPLACEMENT DATA | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| | RESISTANCE | WATTS | MOTOROLA PART No. | IRC PART No. | CLAROSTAT PART No. | CENTRALAB PART No. | |
| R1A | 1Meg | ½ | 18B501206 | Concentrikit | | | |
| B | 250KΩ | ½ | | B11-137 * | | | Tone Control - Front |
| C | Shaft End | | | B13-130X * | | | Volume Control - Tapped@ 150KΩ - Rear |
| D | Switch | | | E-187 * | | RTV-201 | Attach Per Instructions in "Concentrikit" |
| | | | | 76-1 * | | | Attach Per Instructions in "Concentrikit" |

* Additional parts to be used with "Concentrikit".

## RESISTORS

| ITEM No. | RATING | | REPLACEMENT DATA | | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| | RESISTANCE | WATTS | MOTOROLA PART No. | IRC PART No. | |
| R2 | 470KΩ | ½ | 6R6032 | BTS-470K | AVC Network |
| R3 | 150Ω | ½ | 6R3992 | BTS-150 | RF Amp. Cathode |
| R4 | 22KΩ | ½ | | BTS-22K | Converter Grid - See Note |
| R5 | 33KΩ | ½ | 6R6012 | BTS-33K | Osc. Grid |
| R6 | 3900Ω | 2 | 6R476012 | BTB-3900 | Screen Dropping |
| R7 | 330Ω | ½ | 6R6010 | BTS-330 | IF Amp. Cathode |

# CHASSIS—TOP VIEW



# PARTS LIST AND DESCRIPTIONS (Continued)

## RESISTORS

| ITEM No. | RATING | | REPLACEMENT DATA | | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| | RESISTANCE | WATTS | MOTOROLA PART No. | IRC PART No. | |
| R8 | 47kΩ | ½ | 6R6056 | BTS-47K | Diode Filter |
| R9 | 1Meg | ½ | 6R6004 | BTS-1Meg | AVC Network |
| R10 | 1Meg | ½ | 6R6004 | BTB-1Meg | AVC Network |
| R11 | 12KΩ | ½ | 6R6594 | BTB-12K | Tone Compensation |
| R12 | 4.7Meg | ½ | 6R3122 | BTS-4.7Meg | AF Amp. Grid |
| R13 | 2700Ω | ½ | 6R5577 | BTS-2700 | AF Amp. Cathode |
| R14 | 470KΩ | ½ | 6R6032 | BTS-470K | AF Amp. Plate |
| R15 | 220KΩ | ½ | 6R6035 | BTB-220K | Output Grid |
| R16 | 270Ω | 1 | 6R6336 | BTA-270 | Output Cathode |
| R17 | 220Ω | 2 | 6R47B130 | BTB-2200 | Filter |
| R18 | 56Ω | ½ | 6R5614 | | Hash Suppressor |
| R19 | 56Ω | ½ | 6R5614 | | Hash Suppressor |

Note: Some models use 100KΩ resistor in this application.

## TRANSFORMER (VIBRATOR)

| ITEM No. | RATING | | | | REPLACEMENT DATA | | | |
|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. 1 | SEC. 2 | SEC. 3 | MOTOROLA PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. |
| T1 | 6.3VDC @ 4A | 520VCT .055ADC | | | 25B472533 | P-4062 ① | P-2972 ① | VT-3 ① |

① Drill new mounting holes.

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING | | | | REPLACEMENT DATA | | | | |
|---|---|---|---|---|---|---|---|---|---|
| | IMPEDANCE | | DC RES. | | MOTOROLA PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
| | PRI. | SEC. | PRI. | SEC. | | | | | |
| T2 | 5.8KΩ | 3.5Ω | 640Ω | .7Ω | 24B500727 | A-3877 ② | A-3930 | | ② Drill one new mounting hole. |

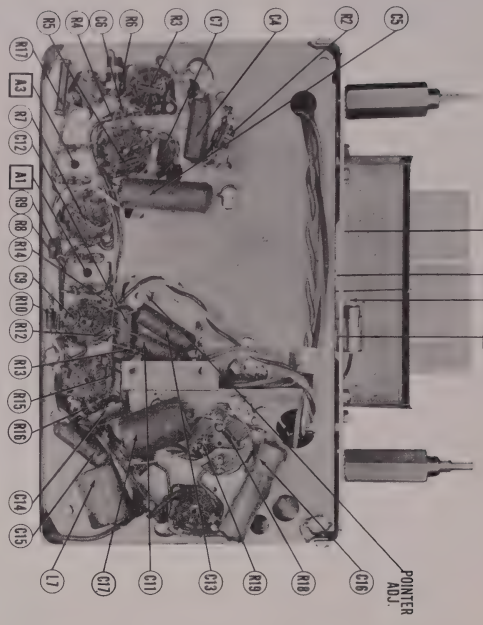
## SPEAKER

| ITEM No. | RATINGS | | REPLACEMENT DATA | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|
| | FIELD | V. C. IMP. | MOTOROLA PART No. | JENSEN PART No. | QUAM PART No. | |
| SP1 | PM | 3.5Ω | 50B501989 | ST108 Mod. P6-X | 6A15 | |
| | CONE DIA. | V. C. DIA. | | | | |
| SP2 | 5 7/8" | 9/16" | | | | |

## R F COILS

| ITEM No. | USE | DC RES. | | REPLACEMENT DATA | | |
|---|---|---|---|---|---|---|
| | | PRI. | SEC. | MOTOROLA PART No. | MEISSNER PART No. | |
| L1 | Ant. Coil | 13Ω | | | | |
| L2 | RF Coil | 13Ω | | | | |
| L3 | Osc. Coil. | .3Ω | 4.8Ω | | | |
| L4 | 1st IF | 19Ω | 19Ω | 24B485553 | | |
| L5 | 2nd IF | 18Ω | 18Ω | 24B485555 | | |
| L6 | Hash Choke | 0Ω | | 24K592269 | | |
| L7 | Hash Choke | 0Ω | | 24A472535 | | |

# CHASSIS—BOTTOM VIEW




# PARTS LIST AND DESCRIPTIONS (Continued)

## VIBRATOR

| ITEM No. | TYPE | INPUT VOLTS | FREQUENCY | REPLACEMENT DATA | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| | | | | MOTOROLA PART No. | AEROVOX PART No. | CORNELL-DUBILIER PART No. | RADIART PART No. | |
| M1 | INT | 6.3 VDC | 115 ~ | 48B3333 | A-200 | 5342 | 5342 | |

## FUSES

| ITEM No. | TYPE | RATING | REPLACEMENT DATA | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | | | MOTOROLA PART No. | | LITTELFUSE PART No. | | |
| | | | FUSE | HOLDER | FUSE | HOLDER | |
| M2 | SFE | 9 Amp. | 65K16248 | | 307009 | 15009A | |

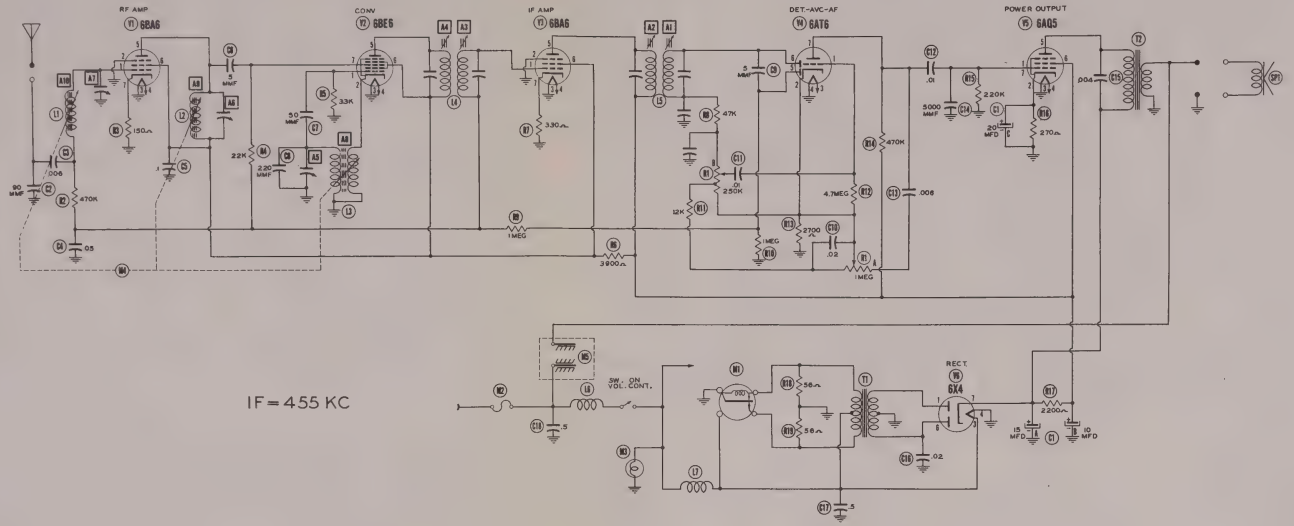
## DIAL LIGHTS

| ITEM No. | BASE TYPE | VOLTS | AMPS. | BEAD COLOR | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|---|---|
| | | | | | MOTOROLA PART No. | | |
| M3 | Bayonet | 6-8 | .25 | Blue | 65X10867 | | Type #44 |

## MISCELLANEOUS

| ITEM No. | PART NAME | MOTOROLA PART No. | NOTES |
|---|---|---|---|
| M4 | Tuner | 51D502000 | Alternate 51D501442 |
| M5 | Spark Plate | 1A501207 | |

PUSHBUTTON ADJUSTMENTS
SINCE THE PUSHBUTTONS ARE MECHANICAL, ANY BUTTON MAY BE SET FOR ANY STATION WITHIN THE RECEIVER'S TUNING RANGE. PRESS THE BUTTON TO THE LEFT AND PULL OUTWARD. CAREFULLY TUNE IN THE DESIRED STATION MANUALLY. PRESS THE BUTTON ALL THE WAY IN. REPEAT THIS PROCEDURE FOR EACH BUTTON.




VOLTAGE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 |
|---|---|---|---|---|---|---|---|---|
| V 1 | 6BA6 | -.1VDC | 0V | 0V | 6.3VDC | 90VDC | 90VDC | 1.3VDC |
| V 2 | 6BE6 | 1-6.8VDC | 0V | 0V | 6.3VDC | 80VDC | 80VDC | -.1VDC |
| V 3 | 6BA6 | -.1VDC | 0V | 0V | 6.3VDC | 175VDC | 90VDC | 2.3VDC |
| V 4 | 6AT6 | -.2VDC | .7VDC | 6.3VDC | 0V | -.2VDC | -.1VDC | 55VDC |
| V 5 | 6AQ5 | 0V | 9.2VDC | 0V | 6.3VDC | 200VDC | 175VDC | 0V |
| V 6 | 6X4 | 265VAC | 0V | 6.3VDC | 0V | 0V | 265VAC | 225VDC |

‡ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 |
|---|---|---|---|---|---|---|---|---|
| V 1 | 6BA6 | 2.5Meg | 0Ω | 0Ω | 4Ω | 195KΩ | 195KΩ | 150Ω |
| V 2 | 6BE6 | 33KΩ | 30 | 0Ω | 4Ω | 195KΩ | 195KΩ | 2Meg |
| V 3 | 6BA6 | 2Meg | 0Ω | 0Ω | 4Ω | 72.2KΩ | 195KΩ | 330Ω |
| V 4 | 6AT6 | 6.7Meg | 2700Ω | 4Ω | 0Ω | 1Meg | 270KΩ | 127KΩ |
| V 5 | 6AQ5 | 220KΩ | 315Ω | 0Ω | 4Ω | 194Ω | 72.2KΩ | 327KΩ |
| V 6 | 6X4 | 400Ω | Inf. | 4Ω | 0Ω | Inf. | 400Ω | ·130KΩ |

† MEASURED FROM PIN 7 OF V6

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Battery voltage maintained at 6.3 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC
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PHOTOFACT* Folder

# RCA VICTOR MODELS 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 7T143, 9T105, 9T126, 9T128, 9T147

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MODEL 7T104

RCA VICTOR MODELS 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 7T143, 9T105, 9T126, 9T128, 9T147

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DATE 5-51 SET 134 FOLDER 9

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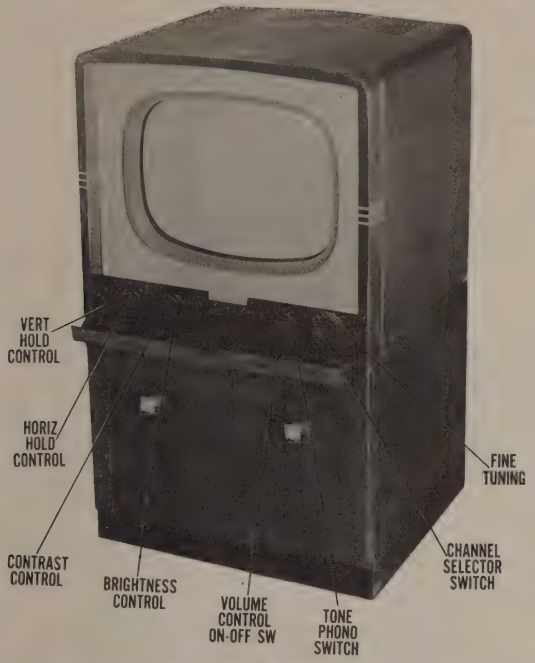
# RCA VICTOR MODELS 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 7T143, 9T105, 9T126, 9T128, 9T147




RCA VICTOR MODEL 7T104

| | |
|---|---|
| TRADE NAME | RCA Victor, Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125 (Ch. KCS47B, C)<br>7T143 (TV Ch. KCS48A And Radio Ch. RC1092)<br>9T105, 9T126, 9T128 (Ch. KCS49B, C)<br>9T147 (TV Ch. KCS 60A And Radio Ch. RC1092) |
| MANUFACTURER | RCA Victor Div., Radio Corp. of America, Camden, New Jersey |
| TYPE SET | Television Receiver (Some Models TV-Radio-Phono Combinations) |
| TUBES | Twenty Two (TV "Only" Models) |
| POWER SUPPLY | 110-120 Volts AC- 60 Cycle |
| RATING | 1.82 Amp. @ 117 Volts AC |
| TUNING RANGE | Channels 2 thru 13 |

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FOR SERVICE INFORMATION ON RADIO CHASSIS RC 1092 - SEE PHOTOFACT FOLDER #8 - SET #122

RECORD CHANGER UNITS - RP168 (45RPM) 960284 (33 1/3 - 78RPM) } Model 7T143
RP190 (45RPM) 960284 (33 1/3 - 78RPM) } Model 9T147


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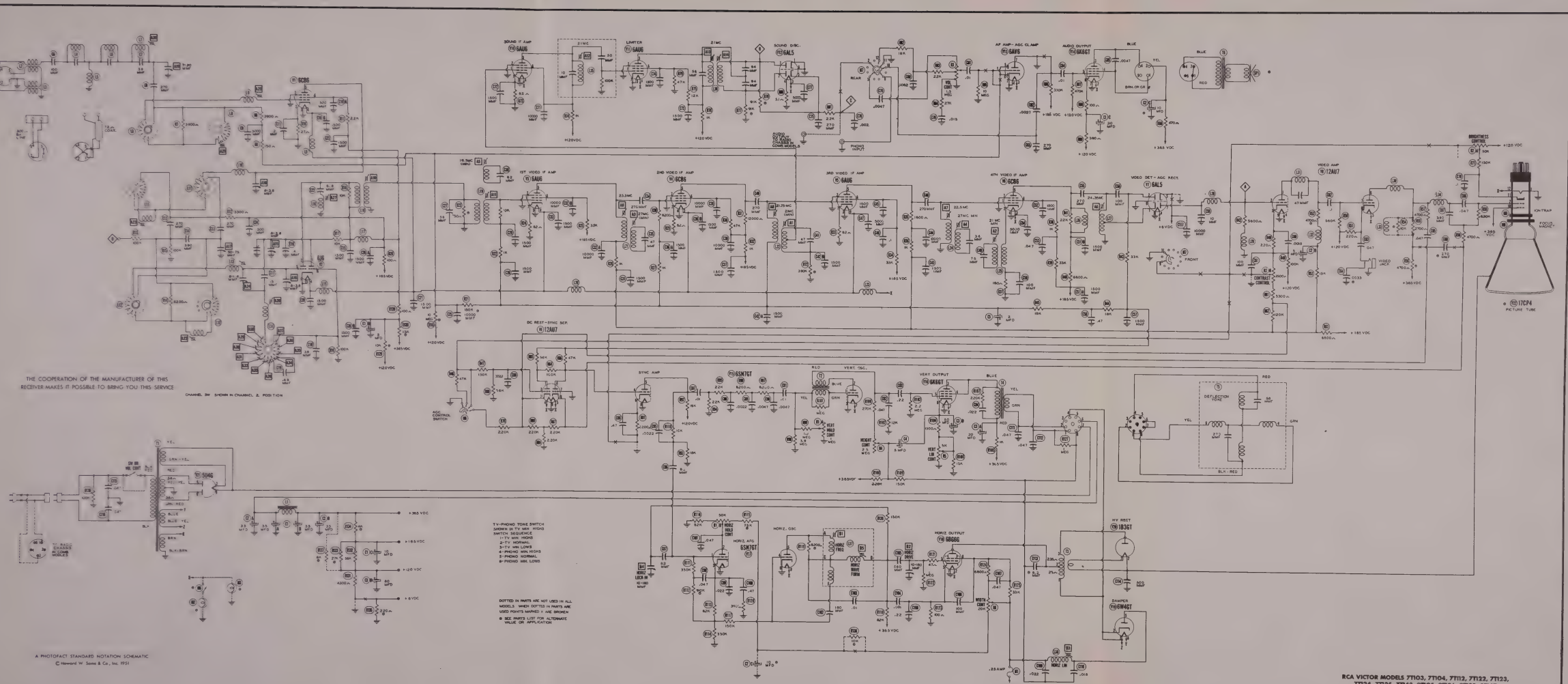
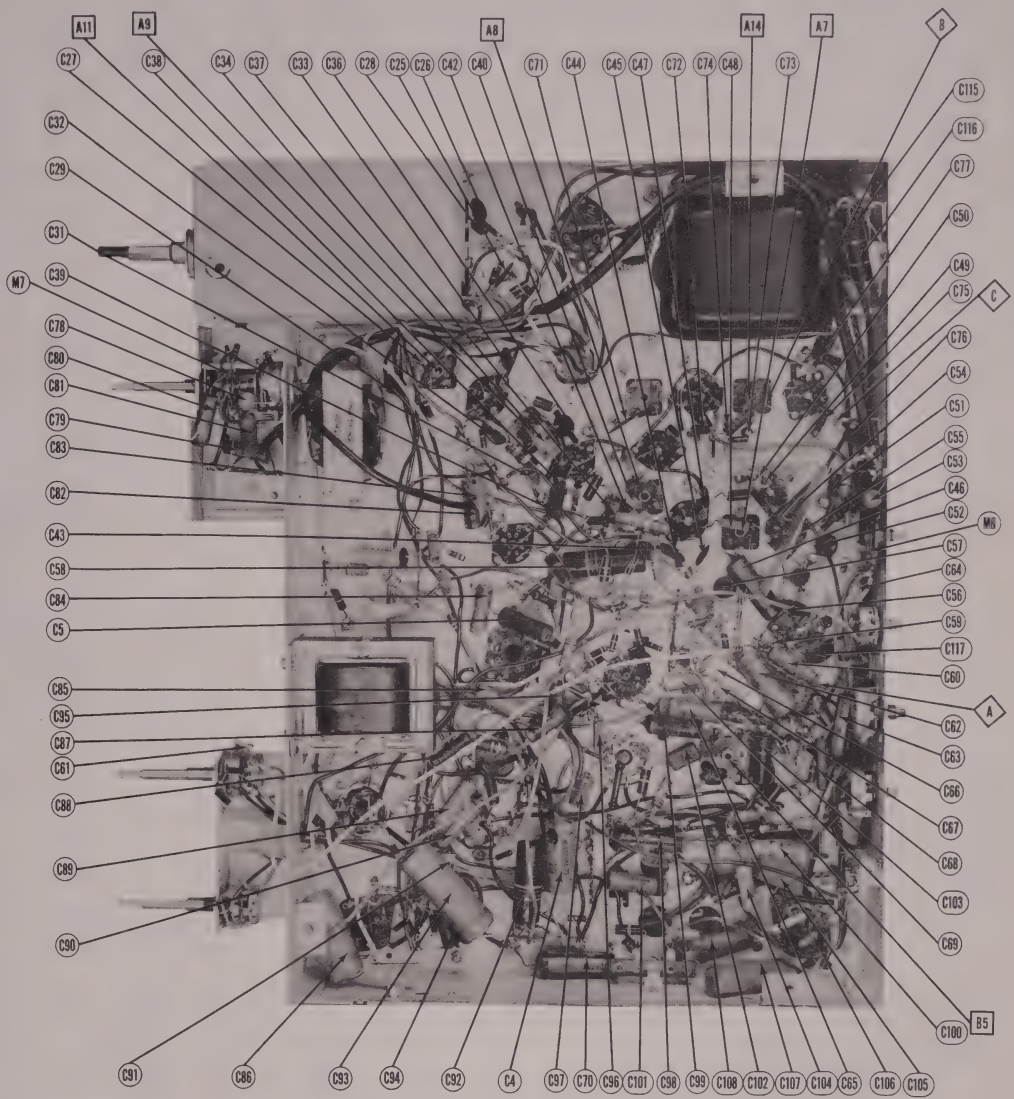
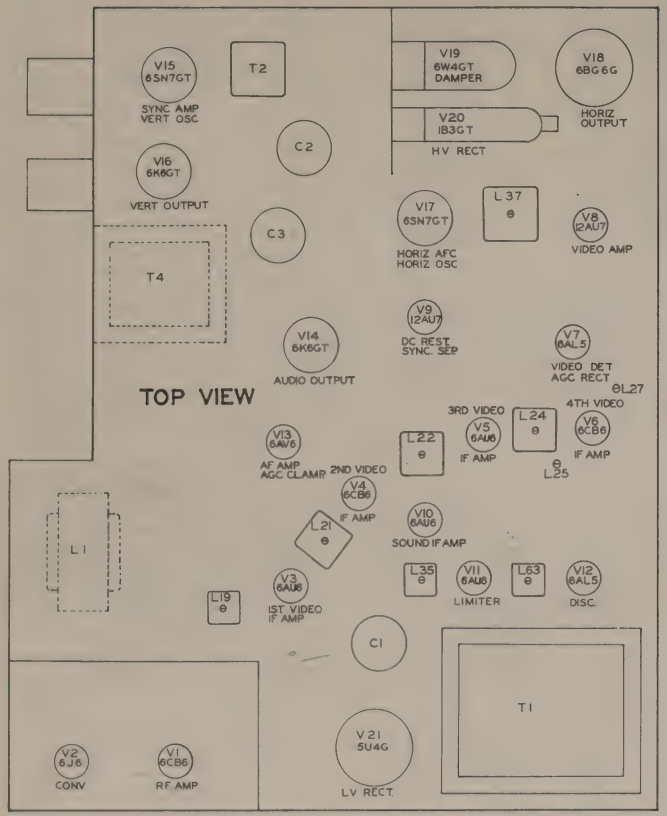
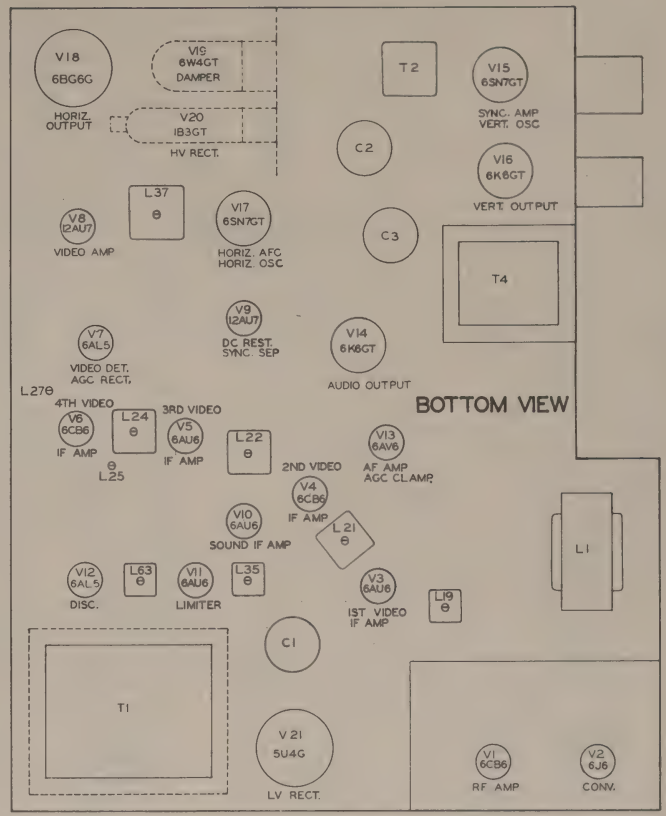

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE
CHANNEL 3W SHOWN IN CHANNEL 2 POSITION
A PHOTOFACT STANDARD NOTATION SCHEMATIC
© Howard W. Sams & Co., Inc. 1951
TV-PHONO TONE SWITCH SHOWN IN TV MIN. HIGHS
SWITCH SEQUENCE
1-TV MIN. HIGHS
2-TV NORMAL
3-TV MIN. LOWS
4-PHONO MIN. HIGHS
5-PHONO NORMAL
6-PHONO MIN. LOWS
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED Y ARE BROKEN
SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
RCA VICTOR MODELS 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 7T143, 9T105, 9T126, 9T128, 9T147

CHASSIS TOP VIEW




CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION




# TUBE PLACEMENT CHART

**RCA VICTOR MODELS 7T103, 7T104, 7T111, 7T122, 7T123, 7T124, 7T125, 7T143, 9T105, 9T126, 9T128, 9T147**

# ALIGNMENT INSTRUCTIONS

**ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT**

The high voltage shock hazard may be eliminated by removing the horizontal oscillator tube, (V17), from its socket.

## VIDEO IF ALIGNMENT

Remove the converter tube, (V2), from its socket and replace it with a 6J6 which has Pin 1 removed. This will disable the local oscillator and prevent the possibility of erroneous indications.

Connect the negative lead of a 3 volt battery to the junction of R45 and C5. Connect the positive lead to chassis.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 1. | Direct | High side to an ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis. | Not used | 21MC (Unmod.) | Any | USE VTVM DC probe to Point (A). Common to chassis. | A1, A2 | Adjust for MINIMUM deflection. |
| 2. | " | " | " | 27MC | " | " | A3, A4, | " |
| 3. | " | " | " | 19.5MC | " | " | A5 | " |
| 4. | " | " | " | 24.35MC | " | " | A6 | Adjust for maximum deflection. |
| 5. | " | " | " | 22.5MC | " | " | A7 | " |
| 6. | " | " | " | 21.75MC | " | " | A8 | " |
| 7. | " | " | " | 25.3MC | " | " | A9 | " |
| 8. | " | " | 24MC (10MC SWP) | 21.95MC 24.8MC | " | Vert. amp. to Point (A). Low side to chassis. | A10, A11 | Shunt primarys of L21, L22, L24 and L27, (A6 thru A9), with 300Ω carbon resistors. Adjust A10 and A 11 for response curve similar to figure 1. |
| 9. | " | " | " | 21.85MC 24.75MC 25.5MC 26.25MC | " | " | | Remove the shunting resistors. Check for response curve similar to figure 2. If necessary retouch A6 thru A 11 for proper response. |

## SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 10. | .01MFD | High side to Pin 1 (grid) of 6CB6, (V4). Low side to chassis. | 21MC (Unmod.) | Any | DC probe thru 1 meg to Point (B). Common to chassis. | A12, A13 | Adjust for maximum deflection. |
| 11. | " | " | " | " | DC probe to Point (C). Common to chassis. | A14 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. |

## SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120% sawtooth voltage in scope for horizontal deflection.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 10. | .01MFD | High side to Pin 1 (Grid) of 6CB6, (V4). Low side to chassis. | 21MC (450KC SWP) | 21MC | Any | Vert. amp. to Point (C). Low side to chassis. | A12, A13 A14 | Adjust A14 so 21MC occurs at center of crossover lines as per figure 3. Adjust A12 and A13 for maximum amplitude and straightness of crossover lines. Continue with step 12. |

## RF TUNER ALIGNMENT

Remove the dummy converter tube and replace the original 6J6 in its socket.

Connect the negative lead of a 3.5 volt supply from a battery to terminal 3 of the RF unit terminal board, connect the positive lead to chassis.

Disconnect the link between L18 and L19. Connect a 39Ω carbon resistor across terminal 1 and 2 on the terminal board, and loosely couple the link wire to terminal 2.

Detune A10 fully clockwise, (all the way out).

Detune A27 fully counter clockwise, ( in later production L16 is fixed and cannot be tuned).

Set the fine tuning control to the mid-position of its range.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 12. | Two 120Ω carbon resistors | Across antenna terminals with 120Ω in each lead. | Not used | 215.75MC | 13 | VTVM DC probe to Point (C). Common to chassis. | A15 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. |
| 13. | " | " | 183MC (10MC SWP) | 181.25MC 185.75MC | 8 | SCOPE Vert. amp. to Point (D). Low side to chassis. | A16, A17, A18, A19 | Adjust for response curve with bandwidth shown in figure 4. |
| 14. | " | " | Not used | 87.75MC | 6 | VTVM DC probe to Point (C). Common to chassis. | A20 | Adjust for zero as in step 12. |
| 15. | " | " | 85MC (10MC SWP) | 83.25MC 87.75MC | 6 | SCOPE Vert. amp. to Point (D). Low side to chassis. | A21, A22, A23 | Adjust for response curve similar to figure 4. |

FIG.1

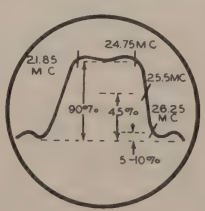


FIG.2

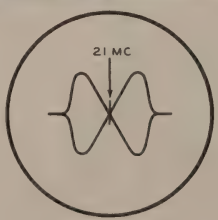
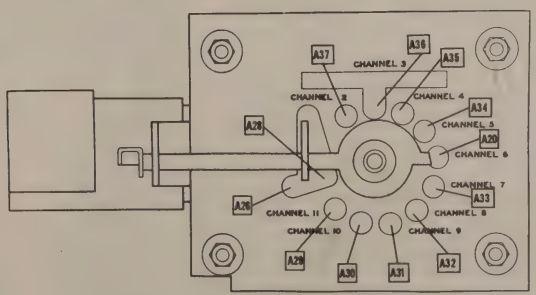


FIG. 3

FIG.4

# ALIGNMENT INSTRUCTIONS (CONT.)

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 16. | Connect VTVM to Point D and adjust A24 for -3 volt reading. Recheck channel 6 response and if necessary retouch A21, A22 and A23 for proper response. Repeat the retouching adjustments until proper channel 6 response is obtained with - 3 volts at Point D . | | | | | | | |
| 17. | Two 120Ω carbon resistors | Across antenna terminals with 120Ω in each lead. | Not used | 185.75MC | 8 | VTVM DC probe to Point ◇C. Common to chassis. | A15 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. |
| 18. | " | " | 183MC (10MC SWP) | 181.25MC 185.75MC | 8 | SCOPE Vert. amp. to Point ◇D. Low side to chassis. | | Readjust A16, A17 and A19 for response curve and bandwidth shown in figure 4. |
| 19. | " | " | 213MC (10MC SWP) | 211.25MC 215.75MC | 13 | " | A25 | Adjust for maximum amplitude midway between the markers. Then over shoot the adjustment by tuning the slug in the same direction slightly more than required for maximum amplitude. Readjust A19 for maximum amplitude. |
| 20. | " | " | Not used | 215.75MC | 13 | VTVM DC probe to Point ◇C. Common to chassis. | A26 | Adjust for zero reading as in step 17. Then over shoot the adjustment as in step 19. Adjust A15 to reset the oscillator to proper frequency. |
| 21. | " | " | 213MC (10MC SWP) | 211.25MC 215.75MC | 13 | SCOPE Vert. amp. to Point ◇D. Low side to chassis. | | Check all high band channels for proper response with markers above 80%. If markers do not appear within 80% repeat step 13. If A19 is adjusted the adjustment should be overshot a small amount and compensated for by adjusting A25 for maximum amplitude between the markers. If the valley in the top of the curves on the high channels seems excessive, adjust A27 to flatten the curve. In later productions A27 may be fixed and not required adjustment. |
| | | | 207MC (10MC SWP) | 205.25MC 209.75MC | 12 | | | |
| | | | 201MC (10MC SWP) | 199.25MC 203.75MC | 11 | | | |
| | | | 195MC (10MC SWP) | 193.25MC 197.75MC | 10 | | | |
| | | | 189MC (10MC SWP) | 187.25MC 191.75MC | 9 | | | |
| | | | 183MC (10MC SWP) | 181.25MC 185.75MC | 8 | | | |
| | | | 177MC (10MC SWP) | 175.25MC 179.75MC | 7 | | | |
| 22. | Check the oscillator frequency for the high band channels. If the oscillator is off frequency, over shoot the adjustment of A15 and compensate for it by adjusting A26 for zero voltage at Point C . | | | | | | | |
| 23. | Repeat step 14. | | | | | | | |
| 24. | Two 120Ω carbon resistors | Across antenna terminals with 120Ω in each lead. | 85MC (10MC SWP) | 83.25MC 87.75MC | 6 | SCOPE Vert. amp. to Point ◇D. Low side to chassis. | | Check for response curve similar to figure 4. If necessary retouch A21, A22 and A23 for proper response. |
| 25. | Check the voltage at Point D . If necessary adjust A24 for -3 volt reading. If A24 is adjusted turn channel selector to channel 8 and readjust A16 for proper response. | | | | | | | |
| 26. | Two 120Ω carbon resistors | Across antenna terminals with 120Ω in each lead. | 85MC (10MC SWP) | 83.25MC 87.75MC | 6 | SCOPE Vert. amp. to Point ◇D. Low side to chassis. | | Check all low band channels for response similar to figure 4 and the injection voltage at Point D which should be - 3 volts. Also check channels 7 thru 13. |
| 27. | Two 120Ω carbon resistors | Across antenna terminals with 120Ωin each lead. | Not used | 215.75MC | 13 | VTVM DC probe to Point ◇C. Common to chassis. | | If necessary adjust A15 for zero voltage as in step 17. |
| 28. | " | " | " | 209.75MC | 12 | " | A28 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. |
| | | | | 203.75MC | 11 | | A29 | |
| | | | | 197.75MC | 10 | | A30 | |
| | | | | 191.75MC | 9 | | A31 | |
| | | | | 185.75MC | 8 | | A32 | |
| | | | | 179.75MC | 7 | | A33 | |
| | | | | 87.75MC | 6 | | A20 | |
| | | | | 81.75MC | 5 | | A34 | |
| | | | | 71.75MC | 4 | | A35 | |
| | | | | 65.75MC | 3 | | A36 | |
| | | | | 59.75MC | 2 | | A37 | |
| 29. | Turn channel switch to channel 8 and adjust A24 for proper response . When A24 is properly adjusted the response curve will be slightly wider with a slightly deeper valley in the center. Check all channels for: (1) proper response, (2) oscillator injection voltage at point D , and (3) oscillator frequency. Make slight touch up adjustments, if necessary. If A16 and A24 are changed considerably repeat step 28. | | | | | | | |
| 30. | Disconnect the 39Ω resistor from terminals 1&2 on terminal strip and reconnect the link. Repeat steps 8 and 9 of VIDEO IF ALIGNMENT. | | | | | | | |




OSCILLATOR ALIGNMENT POINTS

# VOLTAGE AND RESISTANCE MEASUREMENTS

## VOLTAGE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6CB6 | -.2VDC | .3VDC | 0V | 6.3VAC | 160VDC | 90VDC | 0V | | |
| V 2 | 6J6 | 65VDC | 130VDC | 0V | 6.3VAC | -1.7VDC | §-2.8VDC | 0V | | |
| V 3 | 6AU6 | -.3VDC | 0V | 0V | 6.3VAC | 105VDC | 115VDC | .6VDC | | |
| V 4 | 6CB6 | -.3VDC | .6VDC | 6.3VAC | 0V | 100VDC | 95VDC | 0V | | |
| V 5 | 6AU6 | -.3VDC | 0V | 0V | 6.3VAC | 90VDC | 115VDC | .6VDC | | |
| V 6 | 6CB6 | 0V | 1.6VDC | 6.3VAC | 0V | 140VDC | 120VDC | 0V | | |
| V 7 | 6AL5 | 0V | -.2VDC | 0V | 6.3VAC | 6VDC | 0V | -.4VDC | | |
| V 8 | 12AU7 | 100VDC | -.4VDC | 6VDC | 6.3VAC | 6.3VAC | ▲155VDC | ▲0V | ▲3VDC | 0V |
| V 9 | 12AU7 | 2.6VDC | -.2VDC | 1.4VDC | 6.3VAC | 6.3VAC | 2.5VDC | 0V | 1.7VDC | 0V |
| V 10 | 6AU6 | -.1VDC | 0V | 0V | 6.3VAC | 110VDC | 110VDC | .6VDC | | |
| V 11 | 6AU6 | -.1VDC | 0V | 0V | 6.3VAC | 110VDC | 75VDC | 0V | | |
| V 12 | 6AL5 | 0V | -.5VDC | 6.3VAC | 1.2VAC | 0V | 0V | -.5VDC | | |
| V 13 | 6AV6 | -1.4VDC | 0V | 6.3VAC | 0V | -.3VDC | -.3VDC | 70VDC | | |
| V 14 | 6K6GT | ▲12VDC | 6.3VAC | ▲215VDC | ▲225VDC | ▲0V | 0V | 0V | ▲15VDC | |
| V 15 | 6SN7GT | -15VDC<br>-60VDC | 380VDC<br>120VDC | 0V | 2.5VDC | 55VDC | 4.6VDC | 6.3VAC | 0V | |
| V 16 | 6K6GT | 0V | 0V | 355VDC<br>330VDC | 355VDC<br>330VDC | 0V | 40VDC<br>0V | 6.3VAC | 50VDC<br>30VDC | |
| V 17 | 6SN7GT | -2.6VDC | 120VDC | -25VDC | -70VDC | 205VDC | 0V | 0V | 6.3VAC | |
| V 18 | 6BG6G | 365VDC | 6.3VAC | 11VDC<br>8VDC | 0V | -15VDC<br>-20VDC | 0V | 0V | 320VDC<br>310VDC | Top Cap<br>* |
| V 19 | 6W4GT | 0V | 0V | 600VDC | 0V | 360VDC | 0V | 600VDC | 600VDC | |
| V 20 | 1B3GT | * DO NOT MEASURE | | | | | | | | |
| V 21 | 5U4G | 0V | 370VDC | 0V | 360VAC | 0V | 360VAC | 0V | 370VDC | |
| V 22 | 17CP4 | 0V | .5VDC | PIN 10<br>365VDC | PIN 11<br>115VDC | PIN 12<br>6.3VAC | | | | |

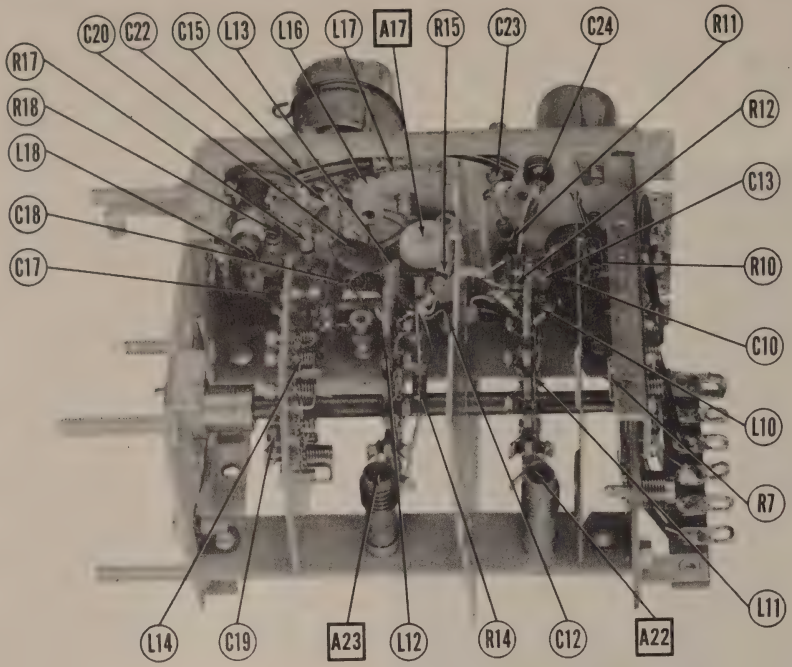
ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED.
AGC SWITCH COUNTERCLOCKWISE
TV-PHONO-TONE SWITCH IN POSITION 1 (COUNTERCLOCKWISE)
§ TAKEN WITH VACUUM TUBE VOLTMETER
▲ MEASURED FROM +120 VDC POINT
* DO NOT MEASURE

## RESISTANCE READINGS

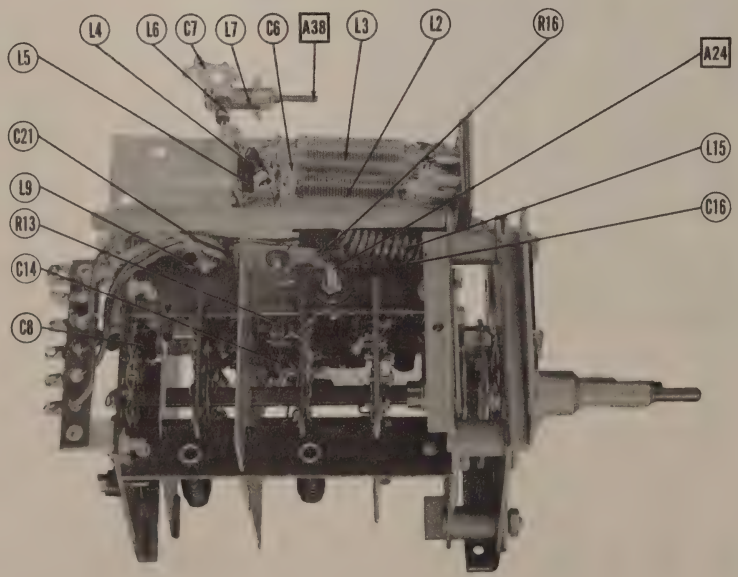
| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6CB6 | 400KΩ | 27Ω | 0Ω | .1Ω | †7.4KΩ | ▲32KΩ | 0Ω | | |
| V 2 | 6J6 | ▲20KΩ | ▲10KΩ | 0Ω | .1Ω | 110KΩ | 100KΩ | 0Ω | | |
| V 3 | 6AU6 | 225KΩ | 0Ω | 0Ω | .1Ω | †12KΩ | †37KΩ | 82Ω | | |
| V 4 | 6CB6 | 230KΩ | 82Ω | .1Ω | 0Ω | †17KΩ | †50KΩ | 0Ω | | |
| V 5 | 6AU6 | 225KΩ | 0Ω | 0Ω | .1Ω | †14KΩ | †37KΩ | 82Ω | | |
| V 6 | 6CB6 | .1Ω | 180Ω | .1Ω | 0Ω | †11KΩ | †38KΩ | 0Ω | | |
| V 7 | 6AL5 | .1Ω | 240KΩ | 0Ω | .1Ω | 220Ω | 0Ω | 5.6KΩ | | |
| V 8 | 12AU7 | †30KΩ | 5.6KΩ | 3.7KΩ | .1Ω | .1Ω | †7.5KΩ | ▲560KΩ | ▲220Ω | 0Ω |
| V 9 | 12AU7 | 50KΩ | 56KΩ | 440KΩ | .1Ω | .1Ω | 45KΩ | 0Ω | 440KΩ | 0Ω |
| V 10 | 6AU6 | 390KΩ | 0Ω | 0Ω | .1Ω | ▲1KΩ | ▲1KΩ | 82Ω | | |
| V 11 | 6AU6 | 100KΩ | 0Ω | 0Ω | .1Ω | ▲1KΩ | ▲11KΩ | 0Ω | | |
| V 12 | 6AL5 | 0Ω | 91KΩ | .1Ω | 2.2Ω | 180KΩ | 0Ω | 91KΩ | | |
| V 13 | 6AV6 | 10Meg | 0Ω | .1Ω | 0Ω | 360KΩ | 360KΩ | †335 KΩ | | |
| V 14 | 6K6GT | ▲390Ω | .1Ω | †885Ω | †515Ω | ▲470KΩ | Inf. | 0Ω | ▲490Ω | |
| V 15 | 6SN7GT | 1Meg | #420KΩ<br>#2.9Meg | 0Ω | 45KΩ | ▲12KΩ | 2.2KΩ | .1Ω | 0Ω | |
| V 16 | 6K6GT | Inf. | 0Ω | †1.4KΩ | †1.4KΩ | 2.2Meg | 3.7KΩ<br>0Ω | .1Ω | 5.2KΩ<br>1.5KΩ | |
| V 17 | 6SN7GT | 1.6Meg | †48KΩ<br>†50KΩ | 410KΩ | 480KΩ | †82KΩ | 0Ω | 0Ω | .1Ω | |
| V 18 | 6BG6G | †45Ω | .1Ω | 100Ω | Inf. | 1Meg | 3.9KΩ | 0Ω | †6KΩ<br>†15KΩ | Top Cap<br>#25Ω |
| V 19 | 6W4GT | Inf. | Inf. | 350KΩ | Inf. | †80Ω | Inf. | #0Ω | #.4Ω | |
| V 20 | 1B3GT | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Top Cap<br>#260Ω |
| V 21 | 5U4G | Inf. | 13KΩ | Inf. | 38Ω | Inf. | 38Ω | Inf. | 13KΩ | |
| V 22 | 17CP4 | 0Ω | 1.3Meg | PIN 10<br>†45Ω | PIN 11<br>155KΩ | PIN 12<br>.1Ω | | | | |

ALL MEASUREMENTS TAKEN WITH PICTURE TUBE REMOVED.
AGC SWITCH COUNTERCLOCKWISE
TV-PHONO-TONE SWITCH IN POSITION 1 (COUNTERCLOCKWISE)
† MEASURED FROM PIN 8 OF V21
▲ MEASURED FROM +120 VDC POINT
# MEASURED FROM PIN 3 OF V19

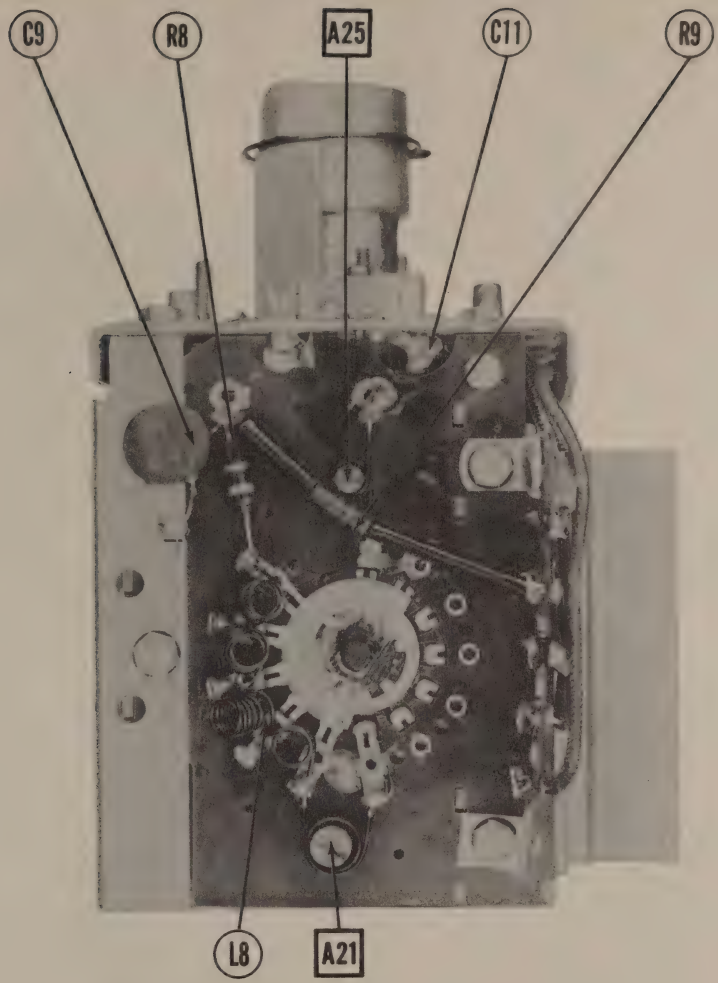
1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.




RF TUNER-RIGHT SIDE




RF TUNER-LEFT SIDE

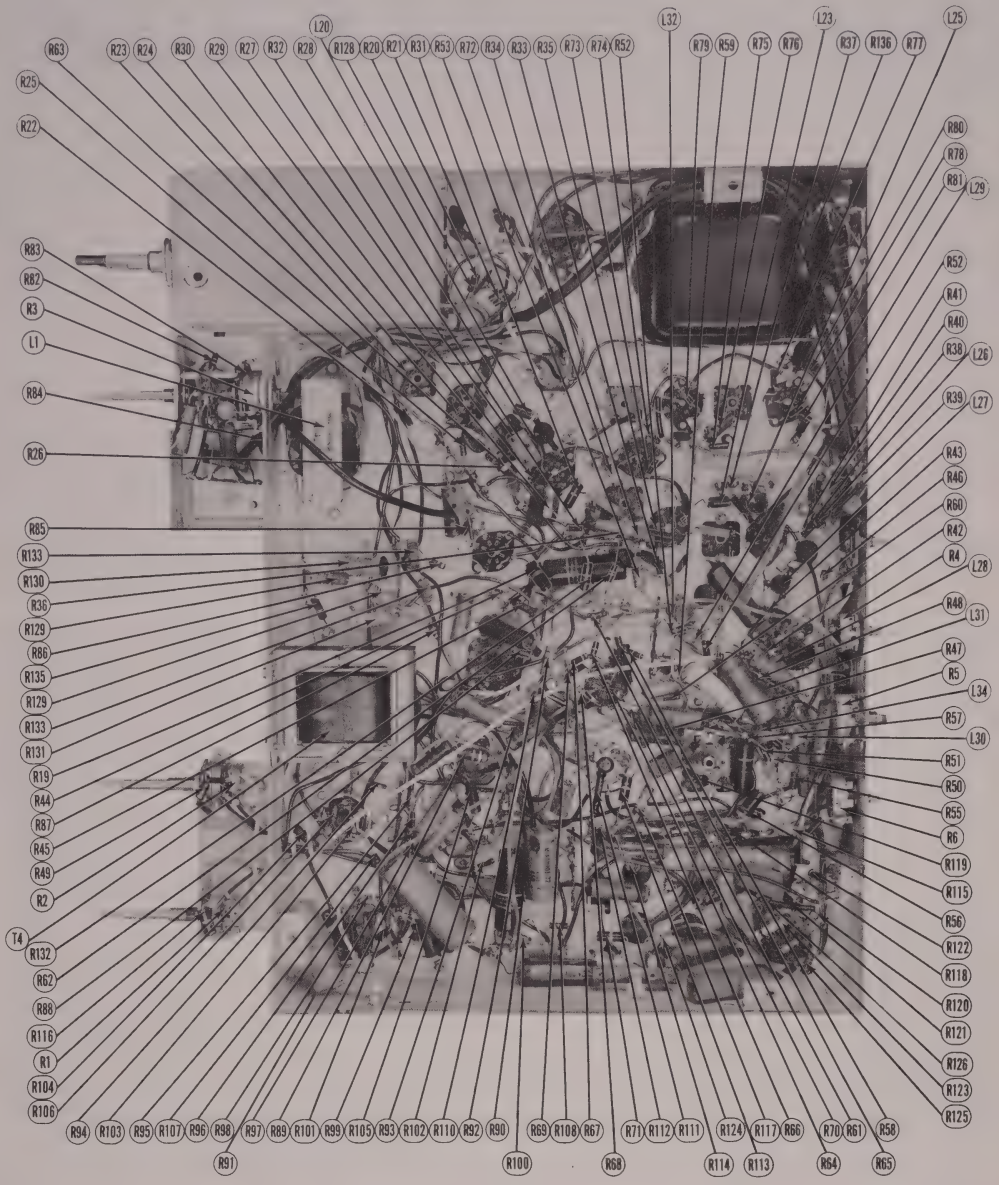



## RF TUNER-REAR VIEW

## DISASSEMBLY INSTRUCTIONS

1. Remove eight push-on type control knobs.
2. Remove two hex head screws from rear cover. Remove rear cover.
3. Disconnect built-in antenna.
4. Remove four hex head screws from speaker. Remove speaker.
5. Disconnect picture tube socket.
6. Disconnect high voltage lead.
7. Disconnect yoke plug.
8. Remove four hex head bolts from chassis. Remove chassis.

NOTE: FOR PICTURE TUBE REMOVAL, IT IS NECESSARY TO REMOVE THE CHASSIS AS OUTLINED ABOVE.




CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

RCA VICTOR MODELS 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 7T143, 9T105, 9T126, 9T128, 9T147

# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA: RCA PART No. | REPLACEMENT DATA: STANDARD REPLACEMENT | RMA BASE TYPE | NOTES |
|---|---|---|---|---|---|
| V1 | RF Amplifier | 6CB6 | 6CB6 | 6CK | |
| V2 | Converter | 6J6 | 6J6 | 7BF | |
| V3 | 1st. Video IF Amp. | 6AU6 | 6AU6 | 7BK | |
| V4 | 2nd. Video IF Amp. | 6CB6 | 6CB6 | 6CK | |
| V5 | 3rd. Video IF Amp. | 6AU6 | 6AU6 | 7BK | |
| V6 | 4th. Video IF Amp. | 6CB6 | 6CB6 | 6CK | |
| V7 | Video Detector-AGC Rectifier | 6AL5 | 6AL5 | 5BT | |
| V8 | Video Amplifier | 12AU7 | 12AU7 | 9A | |
| V9 | DC Restorer-Sync. Separator | 12AU7 | 12AU7 | 9A | |
| V10 | 1st. Sound IF Amp. | 6AU6 | 6AU6 | 7BK | |
| V11 | Limiter | 6AU6 | 6AU6 | 7BK | |
| V12 | Sound Discriminator. | 6AL5 | 6AL5 | 6BT | |
| V13 | AF Amplifier-AGC Clamp | 6AV6 | 6AV6 | 7BT | |
| V14 | Audio Output | 6K6GT | 6K6GT | 7S | Used in models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, and 7T125. |
| V15 | Sync. Amplifier-Vert. Oscillator | 6SN7GT | 6SN7GT | 8BD | |
| V16 | Vert. Output | 6K6GT | 6K6GT | 7S | |
| V17 | Horiz. AFC-Horiz. Oscillator | 6SN7GT | 6SN7GT | 8BD | |
| V18 | Horiz. Output | 6BG6G | 6BG6G | 5BT | |
| V19 | Damper | 6W4GT | 6W4GT | 4CG | |
| V20 | HV Rectifier | 1B3GT | 1B3GT | 3C | |
| V21 | LV Rectifier | 5U4G | 5U4G | 5T | |
| V22A | Picture Tube | 17CP4 | 17CP4 | 12D | |
| B | Picutre Tube | 19AP4A | 19AP4A | 12D | |

## CAPACITORS

**Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING: CAP. | RATING: VOLT | REPLACEMENT DATA: RCA PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C1A | 35 | 450 | 75510 | AFH7721J | | UPT420 | | TVL-3785 | ▲ Filter |
| B | 35 | 450 | | | | | | TVA-1702 | ■ Filter |
| C | 10 | 450 | | | | | | | ▲ Filter Decoupling |
| D | 5 | 450 | | | | | | TVL-3785 | ▲ Filter |
| C2A | 35 | 450 | 75510 | AFh7721J | | UPT420 | | TVA-1702 | ■ Filter |
| B | 35 | 450 | | | | | | | ▲ Output Decoupling * V. Amp. Decoupling |
| C | 10 | 450 | | | | | | | |
| D | 5 | 450 | | | | | | TVL-4742 | ▲ Vert. Output Dec. |
| C3A | 20 | 450 | 75511 | AFH4J164E-10B | | UPT421 | | | ■ Filter |
| B | 80 | 200 | | | | | | | ▲ Output Cathode Vert. Output Cathode |
| C | 20 | 200 | | | | | | | |
| D | 50 | 50 | | | | | | TVA-1702 | Decoupling |
| C4 | 5 | 450 | 28417 | PRS450/4 | | BR445 | | TVA-1301 | AGC Filter |
| C5 | 2 | 50 | 73747 | E26F3 | | BBR2-50T | | | |
| C6 | 100 | | 75437 | 5I100 | D6-101 | | GP1K-100 | 19C11 | RF Coupling |
| C7 | 39 | | 75450 | | TCN-39 | | N750K-39 | | Fixed Trimmer |
| C8 | 270 | | 75199 | 5I270 | D6-271 | | GP2K-270 | 19C31 | RF Coupling |
| C9 | 5000 | | 73473 | BPD-005 | DD-502 | | 811-005 | 29C1 | AGC Filter |
| C10A | 1500 | | 75089 | BPD-2X0015 | DD-2-152 | | 812-2X0015 | 29C6 | RF Amp. Screen |
| B | 1500 | | | | | | | | RF Amp. Fil. |
| C11 | 12 | | 75200 | | TCZ-12 | | NP0K-12 | | RF Amp. Cathode |
| C12 | 270 | | 75199 | 5I270 | D6-271 | | GP2K-270 | 19C31 | RF Coupling |
| C13 | 270 | | 75199 | 5I270 | D6-271 | | GP2K-270 | 19C31 | RF Coupling |
| C14 | 390 | | 75641 | 5I390 | D6-391 | | GP2K-390 | | RF Coupling Conv. Decoupling |
| C15 | 1500 | | 75166 | | | | | | Fixed Trimmer |
| C16 | 4 | | 75289 | | | | NP0K-4 | | |
| C17 | 15 | | 45465 | | TCZ-15 | | NP0K-15 | 19C5 | Osc. Feedback |
| C18 | 39 | | 75196 | 5I39 | D6-390 | | GP1K-39 | | Osc. Grid Cap. Fixed Trimmer |
| C19 | .68 | | 71504 | | TCZ-.68 | | | | |
| C20 | 1500 | | 73748 | BPD-0015 | DD-152 | | 801-0015 | 29C8 | Conv. Filament Filament Bypass |
| C21 | 1500 | | 75166 | | | | | | Fixed Trimmer |
| C22 | 6.8 | | | 5I6.8NP0 | TCZ-6.8 | | NP0K-6.8 | | RF Bypass |
| C23 | 1500 | | 75166 | | | | | | RF Bypass |
| C24 | 1500 | | 75166 | | | | | | |
| C25 | 10000 | | 73960 | BPD-01 | DD-103 | PTE4S1 | 821-01 | 36C1 | AGC Filter |
| C26A | 1500 | | 75089 | BPD-2X0015 | DD-2-152 | 1W5D15 | 812-2X0015 | 29C6 | RF Bypass |
| B | 1500 | | | | | 1W5D15 | | | RF Bypass Fixed Trimmer |
| C27 | 56 | | 71924 | | TCN-56 | | N750K-56 | | |
| C28 | 1500 | | 73748 | BPD-0015 | DD-152 | 1W5D15 | 801-0015 | 29C8 | AGC Filter |
| C29 | 1500 | | 73748 | BPD-0015 | DD-152 | 1W5D15 | 801-0015 | 29C8 | AGC Filter Fixed Trimmer |
| C30 | 82 | | | | | | | | |
| C31 | 1500 | | 73748 | BPD-0015 | DD-152 | 1W5D15 | 801-0015 | 29C8 | RF Bypass |
| C32A | 10000 | | 75877 | BPD-01 | DD-103 | PTE4S1 | 821-01 | 36C1 | 1st. V. IF Plate Dec. |
| B | 10000 | | | BPD-01 | DD-103 | PTE4S1 | 821-01 | 36C1 | 1st. V. IF Screen |
| C33 | 1500 | | 73748 | BPD-0015 | DD-152 | 1W5D15 | 801-0015 | 29C8 | 1st. V. IF Fil. |
| C34 | 270 | 1000 | 73091 | 1468-00025 | D6-271 | 5W5T25 | GP2K-270 | 1FM-325 | IF Coupling Fixed Trimmer |
| C35 | 47 | | | | | | | | |
| C36A | 1500 | | 75089 | BPD-2X0015 | DD-2-152 | 1W5D15 | 812-2X0015 | 29C6 | AGC Filter |
| B | 1500 | | | | | 1W5D15 | | | 2nd. V. IF Fil. |
| C37 | 1500 | | 73748 | BPD-0015 | DD-152 | 1W5D15 | 801-0015 | 29C8 | RF Bypass |
| C38 | 10000 | | 73960 | BPD-01 | DD-103 | PTE4S1 | 821-01 | 36C1 | 2nd. V. IF Dec. |
| C39 | 10000 | | 73960 | BPD-01 | DD-103 | PTE4S1 | 821-01 | 36C1 | 2nd. V. IF Screen |
| C40 | 270 | 1000 | 73091 | 1468-00025 | D6-271 | 5W5T25 | GP2K-270 | 1FM-325 | IF Coupling Fixed Trimmer |
| C41 | 47 | | | | | | | | |
| C42A | 1500 | | 75089 | BPD-2X0015 | DD-2-152 | 1W5D15 | 812-2X0015 | 29C6 | AGC Filter |
| B | 1500 | | | | | 1W5D15 | | | 1st. S. IF Grid Filter |
| C43 | 1500 | | 73748 | BPD-0015 | DD-152 | 1W5D15 | 801-0015 | 29C8 | RF Bypass |
| C44 | 10000 | | 73960 | BPD-01 | DD-103 | PTE4S1 | 821-01 | 36C1 | 3rd. V. IF Plate Dec. |
| C45 | 1500 | | 73748 | BPD-0015 | DD-152 | 1W5D15 | 801-0015 | 29C8 | 3rd. V. IF Screen |
| C46 | .1 | 400 | 73551 | P488-1 | DF-104 | PTE4P1 | | 4TM-P1 | 3rd. V. IF Screen |
| C47 | 5000 | | 73473 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | 3rd. V. IF Fil. |
| C48 | 270 | 1000 | 73091 | 1468-00025 | D6-271 | 5W5T25 | GP2K-270 | 1FM-325 | IF Coupling Fixed Trimmer |
| C49 | 75 | | | 5I75NP0 | TCZ-75 | | NP0M-75 | | |
| C50 | 100 | | 45469 | 5I100NP0 | TCZ-100 | 5R5T1 | NP0M-100 | 36C10 | 4th. V. IF Cathode |
| C51A | 1500 | | 75089 | BPD-2X0015 | DD-2-152 | 1W5D15 | 812-2X0015 | 29C6 | RF Bypass |
| B | 1500 | | | | | 1W5D15 | | | 4th. V. IF Plate Dec. |
| C52 | 1500 | | 73748 | BPD-0015 | DD-152 | 1W5D15 | 801-0015 | 29C8 | 4th. V. IF Screen |
| C53 | .047 | 400 | 73553 | P488-047 | DF-503 | PTE4S5 | | 4TM-S47 | 4th. V. IF Screen |

# PARTS LIST AND DESCRIPTIONS (Continued)

## CAPACITORS (CONT.)

| ITEM No. | RATING CAP. | RATING VOLT | REPLACEMENT DATA RCA PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C54 | 5000 | | 73473 | BPD-005 | DD-502 | DD5D5 | 811-005 | 39C1 | 4th. V. IF Fil. |
| C55 | 270 | 1000 | 73091 | 1468-0005 | D6-371 | SW5T2S | GP2K-270 | 1FM-325 | IF Coupling |
| C56 | 100 | | 39396 | SI100 | D6-101 | SW5T1 | GP1K-100 | 19C1 | IF Coupling |
| C57 | 1500 | | 73748 | BPD-0015 | DD-152 | 1W5D15 | 801-0015 | 39C8 | AGC Filter |
| C58 | .47 | 200 | 73387 | P288-47 | | GT2P5 | | 2TM-P47 | AGC Filter |
| C59 | 10 | | 73511 | SI10 | | 5W2q1 | NP0K-10 | 19C19 | V. Diode Filter |
| C60 | .0015 | 600 | 73598 | P688-0015 | D6-152 | 1W5D15 | GP2L-0015 | 6TM-D15 | V. Amp. Cathode |
| C61 | 100 | | 73437 | SD100 | D6-101 | SW5T1 | GP1K-100 | 19C11 | V. Amp. Cathode |
| C62 | .1 | 400 | 73551 | P488-1 | DF-104 | PTE4P1 | | 6TM-P1 | Video Coupling |
| C63 | .047 | 400 | 73071 | P488-047 | DF-503 | PTE4S5 | | 6TM-347 | V. Amp. Cathode |
| C64 | .0033 | 600 | 73590 | P688-0033 | D6-332 | PTE5D3 | GP2M-0033 | 6TM-D33 | V. Amp. Cathode † |
| C65 | .047 | 600 | 73592 | P688-047 | DF-503 | PTE6S5 | | 6TM-D47 | Video Coupling |
| C66 | .047 | 600 | 73592 | P688-047 | DF-503 | PTE6S5 | | 6TM-D47 | Video Coupling |
| C67 | 390 | 1000 | 73094 | 1468-0004 | D6-391 | SW5T4 | GP2K-390 | 1FM-34 | Video Coupling |
| C68 | 270 | | | SI270 | D6-371 | SW5T2S | GP2K-270 | 19C31 | Video Coupling † |
| C69 | .0022 | 600 | 73595 | P688-0022 | D6-222 | PTE6D3 | GP2M-0022 | 6TM-D22 | AGC Filter |
| C70 | .1 | 600 | 73557 | P688-1 | DF-104 | PTE6P1 | | 6TM-P1 | Pic. Tube Cathode |
| C71 | 10000 | | 73960 | BPD-01 | DD-103 | PTE4S1 | 831-01 | 36C1 | 1st. IF Dec. |
| C72 | 1500 | | 73748 | BPD-0015 | DD-152 | 1W5D15 | 801-0015 | 39C8 | 1st IF. IF Cathode |
| C73 | 1500 | | 75166 | SI1500 | D6-152 | 1W5D15 | 80L-0015 | 39C8 | Limiter Decoupling |
| C74 | 1500 | | 75166 | SI1500 | D6-152 | 1W5D15 | 80L-0015 | 39C8 | Limiter Screen |
| C75 | 270 | | 75344 | SI270 | D6-371 | SW5T2S | GP2K-270 | 19C31 | RF Bypass |
| C76 | .002 | 600 | 73595 | P688-003 | D6-202 | PTE6D2 | GP2M-002 | 6TM-D2 | De-emphasis |
| C77 | .01 | | 73573 | BPD-005 | DD-502 | 1DD5S | 811-005 | 36C1 | Discr. Filament |
| C78 | .0047 | 600 | 73220 | P688-0047 | D6-472 | PTE6D5 | GP2M-0047 | 6TM-D47 | Audio Coupling |
| C79 | 375 | 200 | 73797 | P288-315 | | PTE6S5 | | 6TM-S15 | Tone Comp. |
| C80 | .0082 | 400 | 73808 | | | | | | Tone Comp. |
| C81 | .01 | 400 | 73585 | P488-01 | D6-103 | PTE4S1 | 82L-01 | 6TM-S1 | Audio Coupling |
| C82 | .0027 | 600 | 73599 | P688-0027 | D6-272 | 1W5D25 | GP2M-0027 | 1FM-325 | Tone Comp. |
| C83 | 370 | 500 | 39838 | SI370 | D6-371 | SW5T2S | GP2K-370 | 19C31 | Tone Comp. |
| C84 | .01 | 400 | 73585 | P488-01 | D6-103 | PTE4S1 | 82L-01 | 6TM-S1 | Audio Coupling |
| C85 | .0047 | 600 | 73220 | P688-0047 | D6-472 | PTE6D5 | GP2M-0047 | 6TM-D47 | Output Plate |
| C86 | 47 | 200 | 73787 | P288-47 | | GT2P5 | | 2TM-P47 | Sync. Amp. Cathode |
| C87 | .01 | 400 | 73585 | P488-01 | D6-103 | PTE4S1 | 82L-01 | 6TM-S1 | Vert. Sync. Coupling |
| C88 | .0022 | 600 | 73595 | P688-0022 | D6-222 | PTE6D2 | GP2M-0022 | 6TM-D22 | Integrator Net |
| C89 | .0047 | 600 | 73220 | P688-0047 | D6-472 | PTE6D47 | GP2M-0047 | 6TM-D47 | Integrator Net |
| C90 | .0047 | 600 | 73220 | P688-0047 | D6-472 | PTE6D47 | GP2M-0047 | 6TM-D47 | Integrator Net |
| C91 | .01 | 600 | 73594 | P688-01 | D6-103 | PTE6S1 | 831-01 | 6TM-S1 | Vert. Osc. Grid |
| C92 | .047 | 1000 | 73797 | P1068-047 | | PTE6S5 | | MB-347 | Horiz. Discharge |
| C93 | .22 | 600 | 74957 | 684-35 | | GT6P25 | | 6TM-P25 | Vert. Sweep Coupling |
| C94 | .022 | 400 | 73562 | P488-022 | | PTE4S2 | | 6TM-S22 | Vert. Shaping |
| C95 | .0022 | 600 | 73595 | P688-0022 | D6-222 | PTE6D2 | GP2M-0022 | 6TM-D22 | Horiz. Sync. Coupling |
| C96 | 82 | 1000 | 73080 | SI82 | TCZ-82 | 5W5T1 | GP1K-82 | 1TM-31 | Horiz. Sync. Coupling |
| C97 | 82 | 1000 | 73080 | SI82 | TCZ-82 | 5W5T1 | GP1K-82 | 1TM-31 | Horiz. Feedback |
| C98 | .047 | 400 | 73553 | P488-047 | DF-503 | PTE4S5 | | 6TM-347 | AFC Filter |
| C99 | .033 | 400 | 73563 | P488-032 | DF-303 | PTE4S2 | | 6TM-S32 | AFC Filter |
| C100 | .47 | 300 | 73787 | P288-47 | | GT2P5 | | 2TM-P47 | AFC Filter |
| C101 | .047 | 600 | 73592 | P688-047 | DF-502 | PTE6S5 | | 6TM-347 | Horiz. AFC Plate |
| C102 | 180 | 1000 | 73707 | | | PTE6S5 | | | Horiz. Osc. Grid |
| C103 | .01 | 600 | 73594 | P688-01 | D6-103 | PTE6S1 | | 6TM-S1 | Fixed Trimmer |
| C104 | .001 | 1000 | 73645 | P1068-001 | | PTE6D1 | MB-D1 | Horiz. Discharge | |
| C105 | 560 | | 74850 | 1469-0005 | D6-561 | SW5T5 | GP2K-560 | MB-35 | Horiz. Sweep Coupling |
| C106 | 100 | | 39396 | SI100 | D6-101 | SW5T1 | GP1K-100 | 19C11 | Horiz. Output Screen |
| C107 | .047 | 1000 | 73797 | P1068-047 | | PTE6S5 | | MB-347 | Horiz. Output Screen |
| C108 | .22 | 400 | 73794 | P488-23 | | GT4P25 | | 4TM-P22 | Horiz. Output Cathode |
| C109 | .022 | 1000 | 73810 | P1068-022 | | PTE6S3 | | MB-322 | Damper Filter |
| C110 | .068 | 1000 | 73727 | | | | | | Damper Filter |
| C111 | .047 | 1000 | 73597 | P1068-047 | | PTE6S5 | | MB-347 | Fixed Trimmer |
| C112 | .047 | 1000 | 73597 | P1068-047 | | PTE6S5 | | MB-347 | Fixed Trimmer |
| C113 | 8.2 | | 78009 | | | | | | Horiz. Output Plate ‡ |
| C114 | 500 | 20000 | 74947 | HV20B | TV1-502 | | | | H.V. Filter |
| C115 | .047 | 400 | 75871 | P488-047 | DF-503 | PTE4S5 | | 4TM-347 | Line Filter |
| C116 | .047 | 400 | 75871 | P488-047 | DF-503 | PTE4S5 | | 4TM-347 | Line Filter |
| C117 | .0005 | 1000 | 73960 | BPD-01 | DD-101 | PTE4S1 | 82L-01 | 36C1 | DAGC Dec. |

* Used as horizontal AFC coupling in chassis KC548A and KC560A.
† Some models use .0053MFD in this application.
‡ Not used in all models.
‡ Chassis KC549B, KC849C and KC560A use 4.7MMF in this application. Mfgrs. part # 75646.

## CONTROLS

| ITEM No. | RATING RESISTANCE | RATING WATTS | REPLACEMENT DATA RCA VICTOR PART No. | IRC PART No. | CLAROSTAT PART No. | CENTRALAB PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| R1A | 1Meg | | Concentrikit | | | | |
| B | 50K Ω | | 75215 | RTV-110 | SBB-510 | | Vertical Hold Control - Front |
| C | Shaft-End | | | | | | Horizontal Hold Control - Rear |
| R2A | 5.0K Ω | | 75216 | RTV-191 | SBB-511 | | Attach Per Instructions in "Concentrikit" |
| B | 35000 | | | | | | Brightness Control - Front |
| R3A | 1.5Meg | | 78171 | AT-95 | SBT-222-8 ‡ | | Contrast Control - Rear |
| | | | | | | | Volume Control - Tapped ② 250KΩ and 500KΩ |
| B | Shaft | | Not req. | | FKS-1/4 | Not req. | Attach to R3A Per Instructions |
| C | Switch | | Not req. | | SW-A | Not req. | Attach to R3A Per Instructions |
| R4A | 2.5Meg | | 71440 | Q11-239 | AG-84-S | AN-83 | Height Control |
| B | Shaft | | Not req. | Not req. | FKS-1/4 | AK-1 | Attach to R4A Per Instructions |
| R5A | 5000Ω | | 71441 | QU-114 | AM-19-S | AN-10 | Vertical Linearity Control |
| B | Shaft | | Not req. | Not req. | FKS-1/4 | AK-1 | Attach to R5A Per Instructions |
| R6A | 2.5M Ω | | 75018 | Q11-119 | AM-38-S | AN-22 | Width Control |
| B | Shaft | | Not req. | Not req. | FKS-1/4 | AK-1 | Attach to R6A Per Instructions |

‡ Additional parts to be used with "Concentrikit"
‡ Fashion shaft to duplicate original

## RESISTORS

| ITEM No. | RATING RESISTANCE | RATING WATTS | REPLACEMENT DATA RCA VICTOR PART No. | IRC PART No. | IDENTIFICATION CODES ALL RESISTORS ±10% UNLESS OTHERWISE SPECIFIED |
|---|---|---|---|---|---|
| R7 | 39000 | | 50233 | BTS-3900 | Antenna Coil Shunt |
| R8 | 3900Ω | | 50239 | BTS-3900 | AGC Network |
| R9 | 150Ω | 20% | 50415 | BTS-150 | AGC Network |
| R10 | 270 | | 50327 | | RF Amp. Cathode |
| R11 | 22KΩ | | 50322 | BTS-22K | RF Amp. Screen |
| R12 | 3300Ω | | 50233 | BTS-3300 | RF Amp. Plate |
| R13 | 100KΩ | 20% | 50401 | BTS-100K | Series Test Point |
| R14 | 820Ω | | 50282 | BTS-8200 | Mixer Grid Coil Shunt |
| R15 | 100KΩ | 20% | 50401 | BTS-100K | Mixer Grid |

## RESISTORS (CONT.)

| ITEM No. | RATING RESISTANCE | RATING WATTS | REPLACEMENT DATA RCA PART No. | IRC PART No. | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| R16 | 100KΩ | 20% 1 | 50401 | BTS-100K | Osc. Grid |
| R17 | 10KΩ | 1 | 50310 | BTS-10K | Osc. Plate |
| R18 | 10KΩ | 5% 1 | 3078 | | Converter Transformer Shunt |
| R19 | 10Meg | 2 | | BTS-10Meg | Voltage Divider - See Note 2 |
| R20 | 100Ω | 1 | 50410 | BTS-100 | Decoupling |
| R21 | 150KΩ | 1 | 50415 | BTS-150K | AGC Network - See Notes 3 and 9 |
| R22 | 1000Ω | 1 | 50210 | BTS-1000 | AGC Network |
| R23 | 750Ω | 1 | | | 1st Video IF Transformer Shunt - See Note 4 |
| R24 | 82Ω | 1 | 503082 | BTS-82 | 1st Video IF Amp. Cathode |
| R25 | 33KΩ | 1 | 503333 | BTS-33K | 1st Video IF Amp. Screen |
| R26 | 1000Ω | 1 | 503210 | BTS-1000 | 1st Video IF Amp. Plate Decoupling |
| R27 | 10000 | 20% | 504210 | BTS-1000 | AGC Network |
| R28 | 14250Ω | 5% 1 | 14250 | | 2nd Video IF Amp. Grid |
| R29 | 82Ω | 1 | 503082 | BTS-82 | 2nd Video IF Amp. Cathode |
| R30 | 47KΩ | 1 | 503347 | BTS-47K | 2nd Video IF Amp. Screen |
| R31 | 12KΩ | 1 | 30866 | | 2nd Video IF Amp. Plate |
| R32 | 1000Ω | 20% 1 | 504210 | BTS-1000 | 2nd Video IF Amp. Decoupling |
| R33 | 820 | 20% 1 | 503082 | BTS-82 | 3rd Video IF Amp. Cathode |
| R34 | 33KΩ | 2 | | BTS-33K | 3rd Video IF Amp. Screen |
| R35 | 1800Ω | 1 | 503218 | BTS-1800 | 3rd Video IF Amp. Plate |
| R36 | 1000Ω | 20% 1 | 504210 | BTS-1000 | 3rd Video IF Amp. Plate Decoupling |
| R37 | 180Ω | 1 | 503118 | BTS-180 | 4th Video IF Amp. Cathode |
| R38 | 1000Ω | 20% 1 | 504210 | BTS-1000 | 4th Video IF Amp. Screen |
| R39 | 33KΩ | 1 | 503333 | BTS-33K | 4th Video IF Amp. Screen Decoupling |
| R40 | 6800Ω | 1 | 513268 | BTS-6800 | 4th Video IF Amp. Plate Decoupling |
| R41 | 2700Ω | 20% 1 | 504322 | BTS-2700 | Video Peaking Coil Shunt |
| R42 | 5600Ω | 1 | 503256 | BTS-5600 | Video Det. Diode Load |
| R43 | 33KΩ | 20% 1 | 504333 | BTS-33K | AGC Network |
| R44 | 10KΩ | 1 | 503318 | BTS-10K | AGC Network |
| R45 | 18KΩ | 1 | 503318 | BTS-18K | AGC Network |
| R46 | 47KΩ | 20% 1 | 504347 | BTS-47K | AGC Network |
| R47 | 150KΩ | 20% 1 | 504415 | BTS-150K | AGC Network |
| R48 | 220Ω | 1 | 503122 | BTS-220 | Video Amp. Cathode |
| R49 | 100KΩ | 10% 2 | 503410 | BTS-100K | Voltage Divider |
| R50 | 560KΩ | 1 | 503456 | BTS-560K | Video Amp. Grid |
| R51 | 220Ω | 1 | 503122 | BTS-220 | Video Amp. Cathode |
| R52 | 4700Ω | 1 | 503247 | BTS-4700 | Video Amp. Plate - See Note 10 |
| R53 | 15KΩ | 1 | 513315 | BTA-15K | Video Amp. Plate Decoupling |
| R54 | 10KΩ | 1 | 503310 | BTS-10K | Video Peaking Coil Shunt - See Note 1 |
| R55 | 2700Ω | 20% 1 | 504227 | BTS-2700 | Video Amp. Plate |
| R56 | 4700Ω | 20% 1 | | BTS-4700 | Video Amp. Plate - See Note 11 |
| R57 | 4700Ω | 1 | 503247 | BTS-4700 | Isolation |
| R58 | 4700Ω | 1 | 503247 | BTS-4700 | Isolation |
| R59 | 150KΩ | 20% 1 | 504482 | BTS-820K | Picture Tube Grid |
| R60 | 56KΩ | 1 | 503356 | BTS-56K | AGC Amp. Grid |
| R61 | 3300Ω | 1 | 503233 | BTS-3300 | Voltage Divider |
| R62 | 100KΩ | 1 | 503410 | BTS-100K | Voltage Divider |
| R63 | 6800Ω | 2 | 523268 | BTS-6800 | Decoupling |
| R64 | 100KΩ | 1 | 503410 | BTS-100K | AGC Amp. Plate |
| R65 | 56KΩ | 20% 1 | 504356 | BTS-56K | AGC Amp. Plate |
| R66 | 47KΩ | 1 | 503347 | BTS-47K | Sync. Sep. Plate |
| R67 | 220KΩ | 1 | 503422 | BTS-220K | Sync. Sep. Cathode |
| R68 | 240KΩ | 1 | 503422 | BTS-220K | AGC Amp. Cathode |
| R69 | 220KΩ | 1 | 503422 | BTS-220K | Voltage Divider |
| R70 | 220KΩ | 1 | 503422 | BTS-220K | Voltage Divider |
| R71 | 150KΩ | 20% 1 | 514415 | BTA-150K | Picture Tube Cathode |
| R72 | 390KΩ | 1 | 503439 | BTS-390K | Sound IF Amp. Grid - See Note 5 |
| R73 | 82Ω | 1 | 503082 | BTS-82 | Sound IF Amp. Cathode |
| R74 | 1000Ω | 1 | 503210 | BTS-1000 | Sound IF Amp. Decoupling |
| R75 | 12KΩ | 5% 1 | 30436 | BTS-12K-5% | Limiter Screen |
| R76 | 1000Ω | 1 | 513210 | BTA-1000 | Limiter Decoupling |
| R77 | 8KΩ | 5% 1 | | | Disc. Diode Load - See Note 6 |
| R78 | 9KΩ | 5% 1 | | | Disc. Diode Load - See Note 6 |
| R79 | 47KΩ | 1 | 503347 | BTS-47K | Voltage Divider |
| R80 | 5.1Ω | 1 | 73067 | BW-½-5.1 | Disc. Diode Filament - Wire Wound |
| R81 | 22KΩ | 1 | 503322 | BTS-22K | De-emphasis |
| R82 | 18KΩ | 1 | 503318 | BTS-18K | Tone Compensation |
| R83 | 22KΩ | 1 | 503322 | BTS-22K | Tone Compensation |
| R84 | 27KΩ | 1 | 503327 | BTS-27K | Tone Compensation |
| R85 | 10Meg | 2 | 503610 | BTS-10Meg | AF Amp. Grid |
| R86 | 330KΩ | 1 | 503433 | BTS-330K | AF Amp. Plate |
| R87 | 470KΩ | 1 | 503447 | BTS-470K | Output Grid |
| R88 | 100Ω | 1 | 513110 | BW-1-100 | Output Cathode - Wire Wound |
| R89 | 390Ω | 1 | 513139 | BW-1-390 | Output Cathode - Wire Wound |
| R90 | 470Ω | 1 | 513147 | BTA-470 | Output Decoupling |
| R91 | 2200Ω | 20% 1 | 504222 | BTS-2200 | Sync. Amp. Cathode |
| R92 | 18KΩ | 1 | 513318 | BTA-18K | Sync. Amp. Plate |
| R93 | 18KΩ | 1 | 503318 | BTS-18K | Voltage Divider |
| R94 | 22KΩ | 1 | 503322 | BTS-22K | Voltage Divider |
| R95 | 22KΩ | 1 | 503322 | BTS-22K | Integrator |
| R96 | 8200Ω | 1 | 503282 | BTS-8200 | Integrator |
| R97 | 8200Ω | 1 | 503282 | BTS-8200 | Integrator |
| R98 | 3.9Meg | 1 | 503539 | BTS-3.9Meg | Vertical Osc. Grid |
| R99 | 1.2Meg | 1 | 503512 | BTS-1.2Meg | Vertical Osc. Grid |
| R100 | 270KΩ | 1 | 513427 | BTA-270K | Vertical Osc. Plate |
| R101 | 1Meg | 1 | 503510 | BTS-1Meg | Vertical Osc. Transformer Shunt |
| R102 | 12KΩ | 5% 1 | 30436 | BTS-12K-5% | Vertical Peaking |
| R103 | 2.2Meg | 1 | 503522 | BTS-2.2Meg | Vertical Output Grid |
| R104 | 1500Ω | 20% 1 | 514315 | BTA-1500 | Vertical Output Cathode |
| R105 | 1500Ω | 20% 1 | 514310 | BTA-1500 | Vertical Output Decoupling |
| R106 | 15KΩ | 1 | 503315 | BTS-15K | Vertical Linearity Control Shunt |
| R107 | 220KΩ | 5% 1 | 503422 | BTS-220K-5% | Damping |
| R108 | 220KΩ | 5% 1 | 503422 | BTS-220K-5% | Voltage Divider |
| R109 | 150KΩ | 1 | 503415 | BTS-150K | Voltage Divider |
| R110 | 10KΩ | 1 | 503310 | BTS-10K | Isolation |
| R111 | 330KΩ | 1 | 503433 | BTS-330K | Horizontal AFC Grid |
| R112 | 910KΩ | 1 | | | Horizontal AFC Grid - See Note 7 |
| R113 | 82KΩ | 1 | 513382 | BTA-82K | Horizontal AFC Cathode |
| R114 | 330KΩ | 5% 1 | 38892 | BTA-330K-5% | Horizontal AFC Cathode |
| R115 | 75KΩ | 1 | | | Horizontal AFC Plate - See Note 8 |
| R116 | 82KΩ | 1 | 513382 | BTA-82K | Voltage Divider |
| R117 | 150KΩ | 5% 1 | 31895 | BTA-150K | Horizontal Osc. Grid |
| R118 | 82KΩ | 1 | 513382 | BTA-82K | Horizontal Osc. Plate |
| R119 | 8200Ω | 1 | 503282 | BTS-8200 | Horizontal Osc. Coil Shunt - See Note 10 |
| R120 | 3900Ω | 1 | 503239 | BTS-3900 | Horizontal AFC Filter |
| R121 | 47Ω | 20% 1 | 504047 | | Parasitic Suppressor |
| R122 | 1Meg | 1 | 503510 | BTS-1Meg | Horizontal Output Grid |
| R123 | 100Ω | 2 | 523110 | BW-2-100 | Horizontal Output Cathode - Wire Wound |
| R124 | 6800Ω | 1 | 513268 | BTA-6800 | Horizontal Output Screen |

| ITEM No. | RATING RESISTANCE | RATING WATTS | REPLACEMENT DATA RCA VICTOR PART No. | IRC PART No. | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| R125 | 33KΩ | 20% ½ | 504333 | BTS-33K | Horizontal Output Screen |
| R126 | 150KΩ | 20% 1 | 31895 | BTA-150K | Horizontal Feedback |
| R127 | 1Meg | ½ | 503510 | BTS-1Meg | Voltage Divider |
| R128 | 100Ω | ½ | 503110 | BTS-100 | Decoupling |
| R129 | 22KΩ | 2 | 523310 | BTS-10K | Voltage Divider - See Note 10 |
| R130 | 13KΩ | 5 | 76085 | | Voltage Divider - Wire Wound - See Note 12 |
| R131 | 4300Ω | 5 | 76083 | | Voltage Divider - Wire Wound |
| R132 | 56KΩ | 5 | 523356 | BTA-56K | Voltage Divider |
| R133 | 27KΩ | 1 | 513327 | BTA-27K | Voltage Divider - See Note 10 |
| R134 | 4000Ω | 10 | 75512 | 1 3/4A-4000 | Voltage Divider - Wire Wound - See Note 13 |
| R135 | 220Ω | ½ | 503122 | BW-½-220 | Voltage Divider - Wire Wound - See Note 1 |
| R136 | 100KΩ | 20% 2 | 524410 | BTB-100K | Isolation |
| R137 | 1500Ω | 10 | 75583 | 1 3/4A-8500 | Voltage Divider - Wire Wound - See Note 1 |
| R138 | 10KΩ | ½ | 503310 | BTS-10K | Horizontal AFC Decoupling - See Note 1 |

Note 1. Not used in all models.
Note 2. Some models use 2.2 meg resistor in this application.
Note 3. Some models use 33KΩ resistor in this application.
Note 4. Some models use 68ΩΩ resistor in this application.
Note 5. Some models use 470KΩ resistor in this application.
Note 6. Some models use 100KΩ resistor in this application.
Note 7. Some models use 820KΩ resistor in this application.
Note 8 Some models use 68KΩ resistor in this application.
Note 9. Some models use parallel resistor in this application to obtain desired value.
Note 10. Some models use series resistor in this application to obtain desired value.
Note 11. Some models use 6800Ω resistor in this application.
Note 12. Some models use 10 watt resistor in this application.
Note 13. Some models use 3000Ω 15 watt resistor in this application.

## TRANSFORMER (POWER)

| ITEM No. | RATING PRI. | RATING SEC. 1 | RATING SEC. 2 | RATING SEC. 3 | REPLACEMENT DATA RCA VICTOR PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. |
|---|---|---|---|---|---|---|---|---|
| T1 | 117VAC | 760VCT | 5VAC | 6.3VAC | 75508 | | | TP-392 |
| | ②1.82A | .225ADC | ② 3A | ② 7A | | | | |
| | | | SEC. 4 | | | | | |
| | | | | ② 1.2A | | | | |

## TRANSFORMER (SWEEP CIRCUITS)

| ITEM No. | RATING DC RESISTANCE PRI. | RATING DC RESISTANCE SEC. | REPLACEMENT DATA RCA VICTOR PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | NOTES |
|---|---|---|---|---|---|---|---|
| T2 | 165Ω | 1310Ω | 74144 | A-8122 | A-4000 ⑤ | TB0-2 | Vertical Block Osc. Trans |
| T3 | 240Ω | 40Ω | 75585 | | | | Horizontal Output Trans. |
| | Tap 25Ω | | | | | | |
| T4 | 400Ω | .32Ω | 74950 | | | | Vertical Output Trans. |
| T5A | 45Ω | | | | | | Horizontal Deflection Coil |
| B | 3.5Ω | | | | | | Vertical Deflection Coil |

⑤ Drill one new mounting hole.

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING IMPEDANCE PRI. | RATING IMPEDANCE SEC. | RATING DC RES. PRI. | RATING DC RES. SEC. | REPLACEMENT DATA RCA VICTOR PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| T6 | 7KΩ | 3.4Ω | 370Ω | .43Ω | 75520 | A-3878 ④ | A-3020 | R0-13 ④ | ④ Drill one new mounting hole. |

## SPEAKER

| ITEM No. | RATINGS | | REPLACEMENT DATA RCA VICTOR PART No. | JENSEN PART No. | QUAM PART No. | NOTES |
|---|---|---|---|---|---|---|
| | FIELD RES. | V. C. IMP. | | | | |
| SP1A | PM | 3.4Ω | 75023 ① | ST17 | 8A31 | ① Use in models 9T105, 17T13, 17T04 |
| B | PM | 3.4Ω | 74974 ③ | Mod. P8-T 12J12 ③ | 12A4A | ② Use in models 9T126, 9T128, 17T12, 17T23 17T24 |
| | CONE DIA. | V. C. DIA | | | | ③ Viking Part Number |
| SP2A | 3 3/4" | 1" | 75024 or76120 | | | |
| B | 11 3/4" | 1" | 75082 or 75875 or 76121 | | | |

## FILTER CHOKE

| ITEM No. | RATINGS TOTAL DIRECT CURRENT | RATINGS INDUCTANCE @ CURRENT | RATINGS D.C. RESISTANCE | REPLACEMENT DATA RCA VICTOR PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| L1 | .225A | 1000 MA | 1.1 Henries | 73154 | C-2326 ⑤ | C-2991 | TR-3300 | ② Drill one new mounting hole. |

## COILS (RF-IF)

| ITEM No. | USE | DC RES. PRI. | DC RES. SEC. | REPLACEMENT DATA RCA VICTOR PART No. | MEISSNER PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|---|---|
| L3 | Ant. Coil | .61 | .62 | 73591 | | | |
| L5 | Ant. Coil | .63 | .67 | 73591 | | | |
| L4 | IF Trap | .21Ω | | 75242 | | | |
| L7 | Ant. Coil Shunt | 0Ω | | 75241 | | | |
| L6 | IF Trap | .21Ω | | 75242 | | | |
| L7 | FM Trap | 0Ω | | 75449 | | | |
| L8 | Ant. Coils | 0Ω | | 75180 | | | Complete with Stator, Rotor, Coils, and Capacitor's C8, C9, Resistors R7, R8, R9 |
| L9 | Fil. Choke | 0Ω | | 73477 | | | |
| L10 | RF Coil | 0Ω | | 75183 | | | Includes . 8-3.8 Trimmer |
| L11 | RF Coils | 0Ω | | 75179 | | | Complete with Stator, Rotor, Coils and Capacitor C13 and Resistor R12 |
| L12 | Mixer Grid Coils | 0Ω | | 75178 | | | Complete with Stator, Rotor, Coils, Capacitors C12, C14, Resistors R13, R14, R15 |
| L13 | Mixer Grid Coil | 0Ω | | 75182 | | | Includes . 8-3.8 Trimmer |
| L14 | Osc. Coils | 0Ω | | 75175 | | | Complete with Stator, Rotor, Coils, Capacitors C17, C19 |

# PARTS LIST AND DESCRIPTIONS (Continued)

| ITEM No. | USE | DC RES. | | REPLACEMENT DATA | | | NOTES |
|---|---|---|---|---|---|---|---|
| | | PRI. | SEC. | RCA VICTOR PART No. | MEISSNER PART No. | IRC PART No. | |
| L15 | Fil. Choke | 0Ω | | | | | |
| L16 | Mixer Plate Loading Coil | 0Ω | | 75185 | | | |
| L17 | RF Choke | .3Ω | | 75202 | | CLA | .56 Microhenry |
| L18 | Conv. Trans. | .4Ω | .1Ω | 75181 | | | |
| L19 | 1st Video IF | .1Ω | .4Ω | 74589 | | | Includes Trap |
| L20 | Fil. Choke | 0Ω | | 73477 | | | |
| L21 | 2nd Video IF | .1Ω | | 74590 | | | Includes Trap |
| L22 | 3rd Video IF - Sound Take Off | .2Ω | 0Ω | 76264 | | | |
| L23 | Fil. Choke | 0Ω | | 73477 | | | |
| L24 | 4th Video IF | .1Ω | .1Ω | 73574 | | | Includes Trap |
| L25 | Sound Trap | .1Ω | 0Ω | 71778 | | | |
| L26 | Peaking | 2.8Ω | | 76011 | | | 36 Microhenries - Orange-Blue Dots. |
| L27 | 5th Video IF | .4Ω | | 75210 | | | Tap at .1Ω |
| L28 | Peaking | 2.8Ω | | 75299 | | | 36 Microhenries - Orange-Blue Dots |
| L29 | Peaking | 12Ω | | 75252 | 19-1923 | | 500 Microhenries - Green-White Dots |
| L30 | Peaking | 2.8Ω | | 71793 | | | 36 Microhenries - Black Dot Green- Yellow Dots |
| L31 | 4.5MC Trap | 2.5Ω | | 75251 | | | |
| L32 | Peaking | 12Ω | | 75252 | 19-1923 | | 500 Microhenries - Green-White Dots |
| L33 | Peaking | | | 76132 | 19-1923 | | 500 Microhenries -Blue-Green Dots- Wound on 10KΩ resistor (Not used in all Models.). |
| L34 | Peaking | 5.2Ω | | 75253 | 19-1921 | | 120 Microhenries - Blue-Red Dots |
| L35 | Sound IF | .3Ω | | 75211 | | | |
| L36 | Disc. Trans. | .1Ω | .1Ω | 75212 | | | |
| L37 | Horiz. Osc. Trans. | 82Ω | 50Ω | 75213 | | | |
| L38 | Horiz. Lin. | 35Ω | | 71449 | | | |

## FUSES

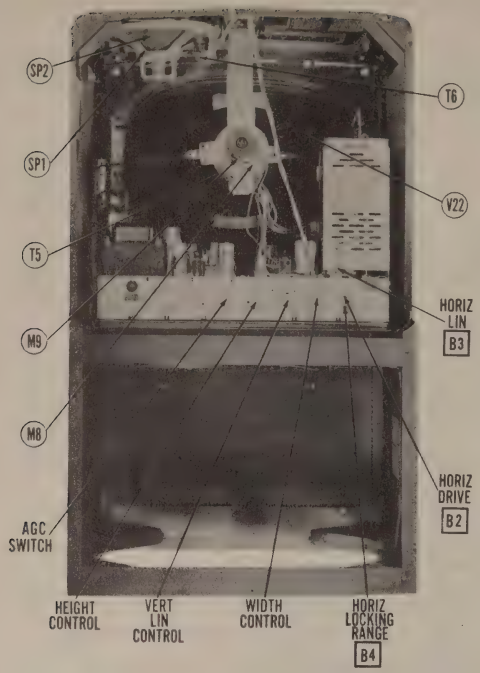
| ITEM No. | TYPE | RATING | REPLACEMENT DATA | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | | | RCA VICTOR PART No. | | LITTELFUSE PART No. | | |
| | | | FUSE | HOLDER | FUSE | HOLDER | |
| M1 | 3AG Pigtail | .250A | | | 318.250 | | |

## DIAL LIGHTS

| ITEM No. | BASE TYPE | VOLTS | AMPS. | BEAD COLOR | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|---|---|
| | | | | | RCA VICTOR PART No. | | |
| M2 | Bayonet | 6-8 | .2 | White | 11765 | | Type #51 - Channel Indicator (Not used in all Models) |
| M3 | Bayonet | 6-8 | .2 | White | 11765 | | Type #51 - Jewel (Not used in all Models) |

## MISCELLANEOUS

| ITEM No. | PART NAME | RCA VICTOR PART No. | NOTES |
|---|---|---|---|
| M4 | RF Tuner | | |
| M5 | Switch | 75594 | Light (Not used in all Models) |
| M6 | Switch | 76010 | AGC |
| M7 | Switch | 76170 | TV-Phono-Tone (Chassis KCS47B, KCS47C, KCS49B, KCS49C) |
| M8 | Focus Magnet | 76168 | |
| M9 | Ion Trap | 74953 | |
| | Antenna Matching Unit | 75509 | Includes Connector L2, L3, L4, L5, L6, L7 |
| B4, B2 | Trimmer | 75217 | 2 Sections (Horizontal Lock 10-160MMF), Horizontal Drive 10-160MMF) |
| | Safety Glass | 74606 | Models 7T112, 7T122, 7T124, 7T143 |
| | Safety Glass | 76131 | Models 7T103, 7T104 |
| | Safety Glass | 75619 | Models 9T105, 9T126, 9T128, 9T147 |
| | Escutcheon | 75455 | Channel Indicator (Dark) (Models 7T112, 7T122, 7T123, 7T124) |
| | Escutcheon | 75456 | Channel Indicator (Light) (Models 7T112, 7T122, 7T123, 7T124 9T126, 9T128 ) |
| | Escutcheon | 75499 | Channel Indicator (Dark) ( Models 7T103, 7T104, 9T105) |
| | Escutcheon | 75501 | Channel Indicator (Light) (Model 9T105) |
| | Knob | 74960 | Channel Selector (Maroon) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 9T105, 9T126, 9T128) |
| | Knob | 75462 | Channel Selector (Beige) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 9T105, 9T126) |
| | Knob | 74961 | Channel Selector (Tan) (Models 7T103, 7T104, 7T112, 7T122, 7T123 7T125) |
| | Knob | 73996 | Channel Selector (Maroon)(Models 7T143, 9T147) |
| | Knob | 74959 | Fine Tuning (Maroon) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 9T147, 7T143, 9T105, 9T126, 9T128 ) |
| | Knob | 75461 | Fine Tuning (Beige) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 9T105, 9T126 ) |
| | Knob | 73995 | Fine Tuning (Tan) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 9T128) |
| | Knob | 74962 | Brightness-Vert. Hold (Maroon) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 7T143, 9T105, 9T126, 9T128, 9T147) |
| | Knob | 75463 | Brightness, Vert. Hold. (Beige) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 9T105, 9T126) |
| | Knob | 73999 | Brightness, Vert. Hold. (Tan) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 9T128) |
| | Knob | 74963 | Contrast, Horiz. Hold, Volume (Maroon) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 7T143, 9T147, 9T105, 9T126, 9T128) |
| | Knob | 75464 | Contrast, Horiz. Hold, Volume (Beige) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 9T105, 9T126 ) |
| | Knob | 74001 | Contrast, Horiz. Hold, Volume (Tan) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125, 9T105, 9T126, 9T128) |
| | Knob | 76174 | Tone-Phono Switch (Maroon) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125) |
| | Knob | 76175 | Tone-Phono Switch (Beige) (Models 7T103, 7T104, 7T112, 7T122, 7T123, 7T124, 7T125 ) |
| | Knob | 76191 | Tone-Phono Switch (Beige) (Models 9T105, 9T126 ) |
| | Knob | 76190 | Tone-Phono Switch (Maroon) (Models 9T105, 9T126, 9T128 ) |




# CABINET-REAR VIEW

# MISCELLANEOUS ADJUSTMENTS

HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Connect a short across terminals C and D of L37.
Turn the set on and tune in a TV station, preferably a test pattern.
Turn the horizontal hold control to maximum clockwise and adjust the horizontal frequency slug, (B1), until the blanking signal appears in the raster as a single vertical bar.
Turn the hold control counter-clockwise 1/4 turn to synchronize the picture.
Adjust the horizontal drive trimmer, (B2), counter clockwise as far as possible without crowding the right half of the picture.
Adjust the width control until the picture is of proper width.
Adjust the horizontal linearity slug, (B3), until the picture is symmetrical from left to right. Readjustment of B2 may be required to obtain optimum linearity.
Turn the hold control to maximum counter-clockwise and momentarily interrupt the signal by switching to another channel and back again.
Turn the hold control slowly clockwise and carefully note the least number of sloping bars present just before the picture pulls into synchronization.
Adjust the horizontal lock trimmer, (B4), and repeat the check until 7 to 9 bars are present at the pull in point.

HORIZONTAL WAVEFORM ADJUSTMENT

Remove the short from L37.
Turn the horizontal hold control fully clockwise and adjust the horizontal waveform slug, (B5), until the blanking signal appears in the raster as a single vertical bar.
Turn the hold control 1/4 turn counter- clockwise to synchronize the picture.
Connect the vertical input of an oscilloscope to terminal C of L37.
Adjust the horizontal waveform slug, (B5), until the broad and narrow peaks of the waveform on the oscilloscope are of equal height as shown in figure 5. If necessary during adjustment of B5, turn the hold control to keep the picture synchronized.
Turn the hold control to maximum counter-clockwise and momentarily interrupt the signal.
Adjust B4 until 2 bars are present just before the picture pulls into synchronization as the hold control is turned clockwise.
Turn the hold control to fully clockwise and adjust B1 until the blanking signal appears in the raster.
Turn the hold control 1/4 turn counter-clockwise to synchronize the picture.

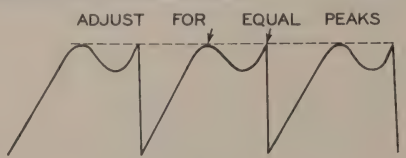



FIG. 5

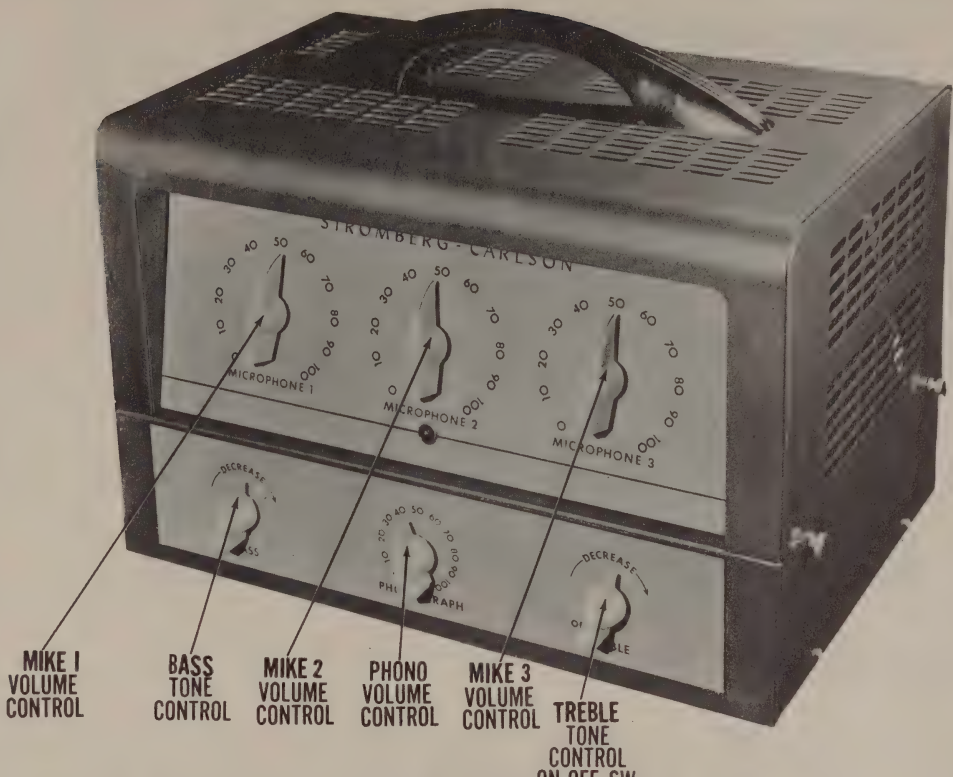
AGC SWITCH SETTING

In strong signal areas the normal setting of the AGC switch is counter-clockwise. If interference of the impulse type is encountered turn the switch to the center position.
In very weak signal areas, turn the switch to the clockwise position.

FM TRAP ADJUSTMENT

If interference from a strong FM station is encountered, adjust A38 to eliminate or minimize the interference. Otherwise A38 requires no adjustment.

STROMBERG-CARLSON
MODEL AU-33




| | |
|---|---|
| TRADE NAME | Stromberg-Carlson, Model AU-33 |
| MANUFACTURER | Stromberg-Carlson Co., 100 Carlson Rd., Rochester, New York |
| TYPE SET | AC Operated Audio Amplifier |
| TUBES (EIGHT) | Types (3)6SJ7 Mic. 1, 2 and 3 Amp., 6SF5 Mixer, 6N7 AF Amp.-Phase Inv., (2) 6L6G Power Output, 5U4G Rectifier |
| POWER SUPPLY | 110-120 Volts AC RATING 1.2 Amp. @ 117 Volts AC |

MODEL AU-33



"The listing of any available replacement part herein does not constitute in any case a recommendation, warranty or guaranty by Howard W. Sams & Co., Inc., as to the quality and suitability of such replacement part. The numbers of these parts have been compiled from information furnished to Howard W. Sams & Co., Inc., by the manufacturers of the particular type of replacement part listed."
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# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA: STROM-CARL PART No. | REPLACEMENT DATA: STANDARD REPLACEMENT | RMA BASE TYPE | INSTALLATION NOTES |
|---|---|---|---|---|---|
| V1 | Mic. 1 Amplifier | 35754 | 6SJ7 | 8N | |
| V2 | Mic. 2 Amplifier | 35754 | 6SJ7 | 8N | |
| V3 | Mic. 3 Amplifier | 35754 | 6SJ7 | 8N | |
| V4 | AF Amplifier | 41486 | 6SF5 | 6AB | |
| V5 | AF Amp.-Phase Inv. | 41131 | 6N7 | 8B | |
| V6 | Power Output | 35756 | 6L6G | 7AC | |
| V7 | Power Output | 35756 | 6L6G | 7AC | |
| V8 | Rectifier | 35758 | 5U4G | 5T | |

## CAPACITORS

**Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING: CAP. | RATING: VOLT | REPLACEMENT DATA: STROM-CARL PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C1A | 30 | 500 | 46320 | AF88K | | UP4450 | | TVL-2830 | ▲ Filter |
| B | 30 | 500 | | | | | | | ▲ Filter |
| C2A | 10 | 350 | 34698 | AF222J5A | | UP11135C | | TVL-4723 | ▲ Decoupling |
| B | 10 | 300 | | | | | | | ■ Decoupling |
| C | 10 | 250 | | | | | | | ▲ Decoupling |
| D | 20 | 50 | | | | | | | AF Amp. Cathode |
| C3 | 50 | 50 | 46327 | PRS50/50 | | BR505 | | TVA-1308 | Output Cathode |
| C4 | 50 | 25 | 41157 | PRS25/50 | | BR502A | | TVA-1206 | Mic. 1 Amp. Cathode |
| C5 | 50 | 25 | 41157 | PRS25/50 | | BR502A | | TVA-1206 | Mic. 2 Amp. Cathode |
| C6 | 50 | 25 | 41157 | PRS25/50 | | BR502A | | TVA-1206 | Mic. 3 Amp. Cathode |
| C7 | .1 | 400 | 25483 | P488-1 | DF-104 | PTE4P1 | | 4TM-P1 | Mic. 1 Amp. Screen |
| C8 | .1 | 400 | 25483 | P488-1 | DF-104 | PTE4P1 | | 4TM-P1 | Mic. 2 Amp. Screen |
| C9 | .1 | 400 | 25483 | P488-1 | DF-104 | PTE4P1 | | 4TM-P1 | Mic. 3 Amp. Screen |
| C10 | .05 | 400 | 40632 | P488-05 | DF-503 | PTE4S5 | | 4TM-S5 | Audio Coupling |
| C11 | .05 | 400 | 40632 | P488-05 | DF-503 | PTE4S5 | | 4TM-S5 | Audio Coupling |
| C12 | .05 | 400 | 40632 | P488-05 | DF-503 | PTE4S5 | | 4TM-S5 | Audio Coupling |
| C13 | 500 | 500 | 27009 | 1468-0005 | D6-501 | 5W5T5 | GP2K-500 | 1FM-35 | Toen Comp. |
| C14 | .01 | 400 | 25485 | P488-01 | D6-103 | PTE4S1 | 821-01 | 4TM-S1 | Tone Comp. |
| C15 | 100 | 500 | 24559 | 1468-0001 | D6-101 | 5W5T1 | GP1K-100 | 1FM-31 | Tone Comp. |
| C16 | .03 | 400 | 27782 | P688-03 | | PTE6S3 | | 6TM-S3 | AF Amp. Cathode |
| C17 | .05 | 400 | 40632 | P488-05 | DF-503 | PTE4S5 | | 6TM-D3 | Audio Coupling |
| C18 | .003 | 400 | 46315 | P688-003 | D6-302 | PTE6D3 | GP2M-003 | 4TM-P1 | Tone Comp. |
| C19 | .1 | 400 | 25483 | P488-1 | DF-104 | PTE4P1 | | 4TM-P1 | Audio Coupling |
| C20 | .1 | 400 | 25483 | P488-1 | DF-104 | PTE4P1 | | 4TM-P1 | Audio Coupling |
| C21 | .1 | 400 | 25483 | P488-1 | DF-104 | PTE4P1 | | | Filament Bypass |

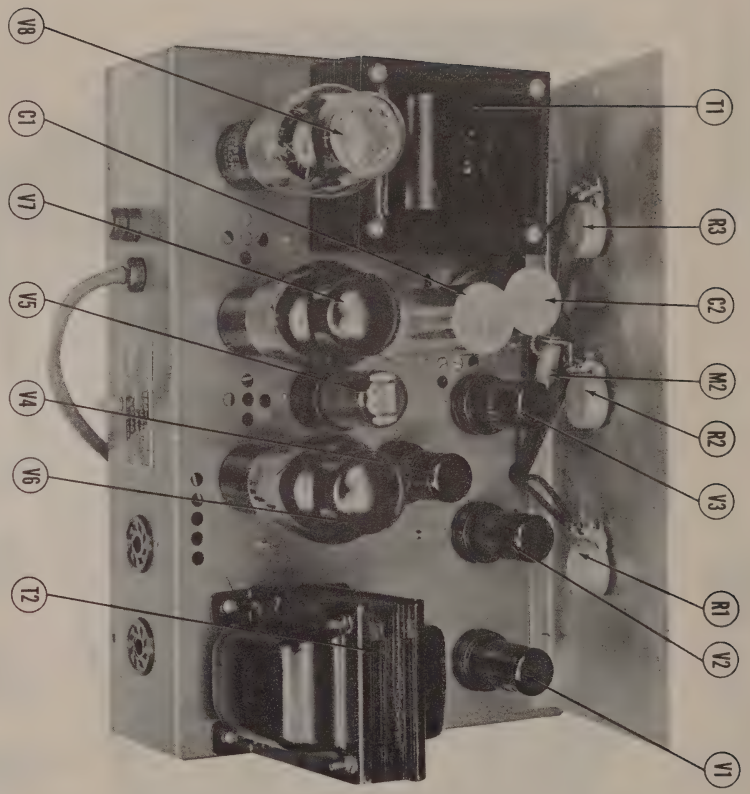
## CONTROLS

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: STROM-CAR PART No. | IRC PART No. | CLAROSTAT PART No. | CENTRALAB PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| R1A | 1Meg | ½ | 46313 | Q13-137 | AM-63-Z | B-70 | Mike 1 Volume Control |
| B | Shaft | | Not Req | Not Req | FS-3 | Not Req | Attach to R1A per instructions |
| R2A | 1Meg | ½ | 46313 | Q13-137 | AM-63-Z | B-70 | Mike 2 Volume Control |
| B | Shaft | | Not Req | Not Req | FS-3 | Not Req | Attach to R2A per instructions |
| R3A | 1Meg | ½ | 46313 | Q13-137 | AM-63-Z | B-70 | Mike 3 Volume Control |
| B | Shaft | | Not Req | Not Req | FS-3 | Not Req | Attach to R3A per instructions |
| R4A | 5Meg | ½ | 46314 | Q11-141 | AM-85-S | B-87 | Bass Control |
| B | Shaft | | Not Req | Not Req | RS-3 | Not Req | Attach to R4A per instructions |
| R5A | 1Meg | ½ | 46313 | Q13-137 | AM-63-Z | B-70 | Phono Volume Control |
| B | Shaft | | Not Req | Not Req | FS-3 | Not Req | Attach to R5A per instructions |
| R6A | 1Meg | ½ | 39838 | Q13-137 | AM-63-Z | B-70-S | Treble Control |
| B | Shaft | | Not Req | Not Req | FS-3 | Not Req | Attach to R6A per instructions |
| C | Switch | | Not Req | 76-1 | SW-A | Not Req | Attach to R6A per instructions |

## RESISTORS

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: STROM-CARL PART No. | IRC PART No. | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| R7 | 1Meg | ½ | 28191 | BTS-1Meg | Mike 1 Pre-Amp. Grid |
| R8 | 1500Ω | ½ | 28160 | BTS-1500 | Mike 1 Pre-Amp. Cathode |
| R9 | 1.5Meg | ½ | 28193 | BTS-1.5Meg | Mike 1 Pre-Amp. Screen |

## CHASSIS—TOP VIEW



# PARTS LIST AND DESCRIPTIONS (Continued)

| | | | | | |
|---|---|---|---|---|---|
| R10 | 150KΩ | ½ | 27640 | BTS-150K | Mike 1 Pre-Amp. Plate |
| R11 | 1Meg | ½ | 28191 | BTS-1Meg | Mike 2 Pre-Amp. Grid |
| R12 | 1500Ω | ½ | 28160 | BTS-1500 | Mik3 2 Pre-Amp. Cathode |
| R13 | 1.5Meg | ½ | 28193 | BTS-1.5Meg | Mike 2 Pre-Amp. Screen |
| R14 | 150KΩ | ½ | 27640 | BTS-150K | Mike 2 Pre-Amp. Plate |
| R15 | 1Meg | ½ | 28191 | BTS-1Meg | Mike 3 Pre-Amp. Grid |
| R16 | 1500Ω | ½ | 28160 | BTS-1500 | Mike 3 Pre-Amp. Cathode |
| R17 | 1.5Meg | ½ | 28193 | BTS-1.5Meg | Mike 3 Pre-Amp. Screen |
| R18 | 150KΩ | ½ | 27640 | BTS-150K | Mike 3 Pre-Amp. Plate |
| R19 | 22KΩ | ½ | 27407 | BTS-22K | Decoupling |
| R20 | 1Meg | ½ | 28191 | BTS-1Meg | Isolation |
| R21 | 1Meg | ½ | 28191 | BTS-1Meg | Isolation |
| R22 | 1Meg | ½ | 28191 | BTS-1Meg | Isolation |
| R23 | 1Meg | ½ | 28191 | BTS-1Meg | Isolation |
| R24 | 680KΩ | ½ | 28189 | BTS-680K | 1st. AF Amp. Grid |
| R25 | 1200Ω | ½ | 28159 | BTS-1200 | 1st. AF Amp. Cathode |
| R26 | 100KΩ | ½ | 28006 | BTS-100K | 1st. AF Amp. Plate |
| R27 | 680KΩ | ½ | 28189 | BTS-680K | AF Amp. Grid |
| R28 | 100KΩ | ½ | 28006 | BTS-100K | AF Amp. Plate |
| R29 | 4700Ω | ½ | 28166 | BTS-4700 | Phase Inv. Grid |
| R30 | 100KΩ | ½ | 28006 | BTS-100K | Phase Inv. Plate |
| R31 | 1500Ω | ½ | 28160 | BTS-1500 | AF Amp. - Phase Inv. Cathode |
| R32 | 100KΩ | ½ | 28006 | BTS-100K | Output Grid |
| R33 | 100KΩ | ½ | 28006 | BTS-100K | Output Grid |
| R34 | 250 | 10 | 46358 | 1 3/4A-250 | Output Cathode - Wire Wound |
| R35 | 470KΩ | ½ | 28187 | BTS-470K | Feedback |
| R36 | 2500Ω | 10 | 46359 | 1 3/4A-2500 | Filter - Wire Wound |
| R37 | 5000Ω | 10 | 46361 | 1 3/4A-5000 | Filter - Wire Wound |
| R38 | 15KΩ | 10 | 46363 | 1 3/4A-15K | Voltage Divider - Wire Wound |

## TRANSFORMER (POWER)

| ITEM No. | RATING | | | | REPLACEMENT DATA | | | |
|---|---|---|---|---|---|---|---|---|
| | PRI. | SEC. 1 | SEC. 2 | SEC. 3 | STROM-CARL PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. |
| T1 | 117VAC @1.2A | 780VCT .150ADC | 5VAC @3A | 6.3VAC @3.8A | 33026 | PM8411 ① | P-2954 ① | PH-145 ① |

① Drill new mounting holes.

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING | | | | REPLACEMENT DATA | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | IMPEDANCE | | DC RES. | | STROM-CAR PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | |
| | PRI. | SEC. | PRI. | SEC. | | | | | |
| T2 | 3.9KΩ CT | 200Ω Taps 4Ω 8Ω 16Ω 25Ω | 120Ω CT | 10Ω Taps .32Ω .5Ω .82Ω 6.6Ω | 46326 | A-3851 | | PC0-80 | ① Drill new mounting holes. |

## FUSES

| ITEM No. | TYPE | RATING | REPLACEMENT DATA | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | | | STROMBERG-CARLSON PART No. | | LITTELFUSE PART No. | | |
| | | | FUSE | HOLDER | FUSE | HOLDER | |
| M1 | 3AG | 3Amp. | 25156 | 27958 | 312003 | 342001 | |

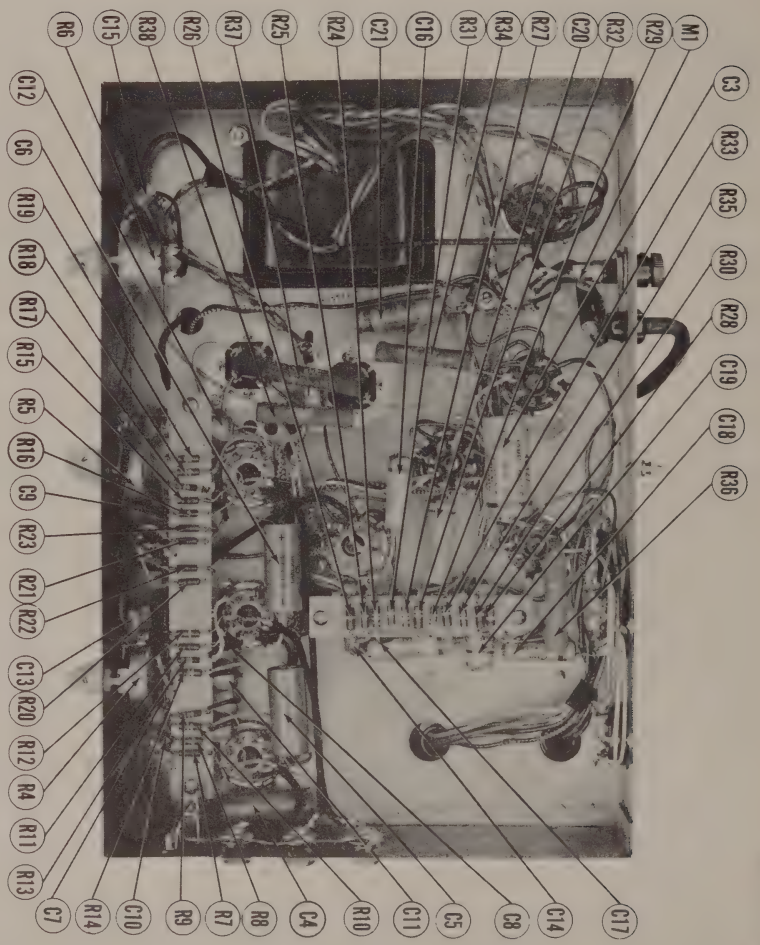
## DIAL LIGHTS

| ITEM No. | BASE TYPE | VOLTS | AMPS. | BEAD COLOR | REPLACEMENT DATA | | NOTES |
|---|---|---|---|---|---|---|---|
| | | | | | STROM-CARL PART No. | | |
| M2 | Bayonet | 7.5 | .2 | White | 28025 | | Type #51 |

## MISCELLANEOUS

| ITEM No. | PART NAME | STROM-CARLSON PART No. | NOTES |
|---|---|---|---|
| | Knob | 32667 | Large |
| | Knob | 39840 | Small |

## CHASSIS—BOTTOM VIEW

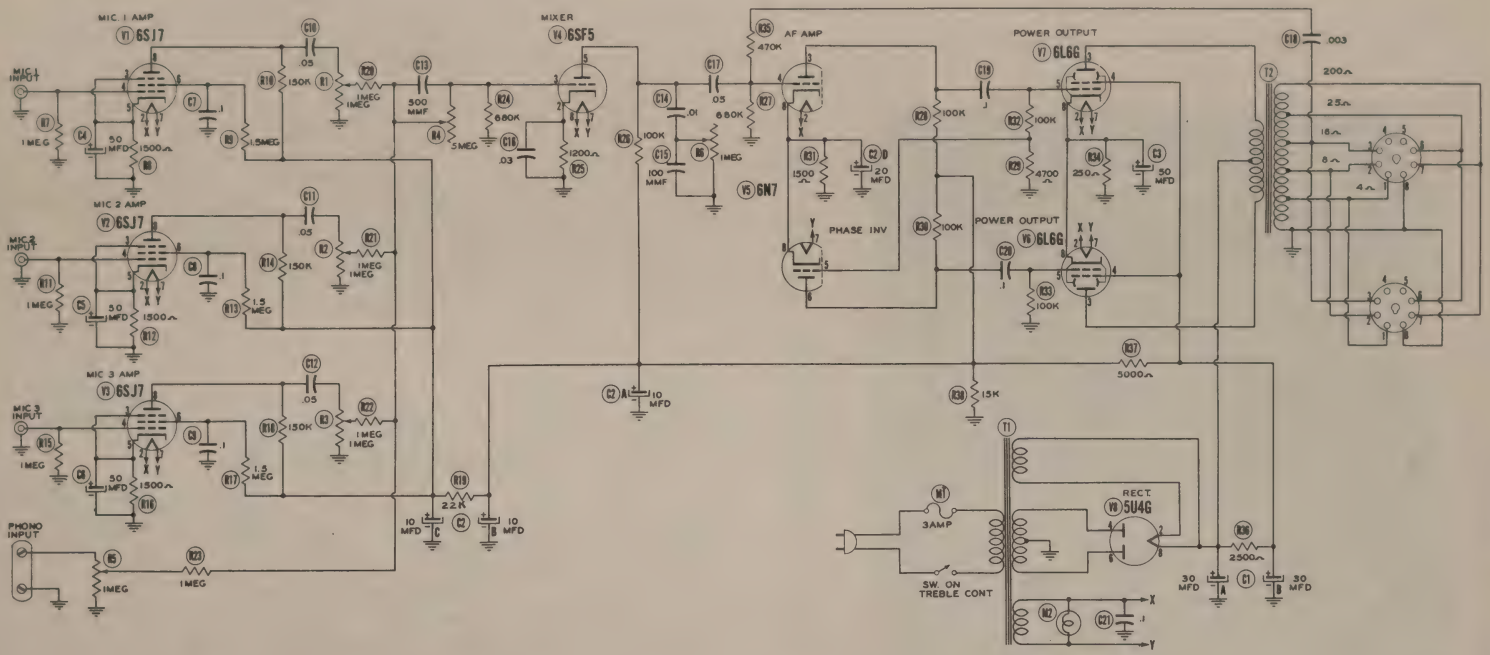



SET 134

FOLDER 10

MODEL AU-33

STROMBERG-CARLSON MODEL AU-33




VOLTAGE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6SJ7 | 0V | ¶ | .9VDC | 0V | .9VDC | 25VDC | ¶ | 135VDC | |
| V 2 | 6SJ7 | 0V | ¶ | .9VDC | 0V | .9VDC | 25VDC | ¶ | 135VDC | |
| V 3 | 6SJ7 | 0V | ¶ | .9VDC | 0V | .9VDC | 25VDC | ¶ | 135VDC | |
| V 4 | 6SF5 | 0V | 1.2VDC | 0V | 0V | 135VDC | 0V | ¶ | ¶ | |
| V 5 | 6N7 | 0V | ¶ | 130VDC | 0V | 0V | 130VDC | ¶ | 3VDC | |
| V 6 | 6L6G | 0V | ¶ | 410VDC | 350VDC | 0V | 0V | ¶ | 30VDC | |
| V 7 | 6L6G | 0V | ¶ | 410VDC | 350VDC | 0V | 0V | ¶ | 30VDC | |
| V 8 | 5U4G | 0V | 420VDC | 0V | 370VAC | 0V | 370VAC | 0V | 420VDC | |

¶ 6.3VAC MEASURED ACROSS FILAMENTS.

RESISTANCE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 |
|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6SJ7 | 0Ω | Inf. | 1.5KΩ | 1Meg | 1.5KΩ | †1.5Meg | Inf. | †180KΩ |
| V 2 | 6SJ7 | 0Ω | Inf. | 1.5KΩ | 1Meg | 1.5KΩ | †1.5Meg | Inf. | †180KΩ |
| V 3 | 6SJ7 | 0Ω | Inf. | 1.5KΩ | 1Meg | 1.5KΩ | †1.5Meg | Inf. | †180KΩ |
| V 4 | 6SF5 | 0Ω | 1.2KΩ | 200KΩ | Inf. | †105KΩ | Inf. | Inf. | Inf. |
| V 5 | 6N7 | 0Ω | Inf. | †105KΩ | 680KΩ | 4.7KΩ | †105KΩ | Inf. | 1.5KΩ |
| V 6 | 6L6G | 0Ω | Inf. | †88Ω | †2.5KΩ | 100KΩ | Inf. | Inf. | 250Ω |
| V 7 | 6L6G | 0Ω | Inf. | †62Ω | †2.5KΩ | 105KΩ | Inf. | Inf. | 250Ω |
| V 8 | 5U4G | Inf. | 20KΩ | Inf. | 50Ω | Inf. | 50Ω | Inf. | 20KΩ |

† MEASURED FROM PIN 8 OF V8

THE COOPERATION OF THE MANUFACTURER OF THIS EQUIPMENT MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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134-10

1 - DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1000 ohms per volt.
2 - Socket connections are shown as bottom views.
3 - Measured values are from socket pin to common negative.
4 - Line voltage maintained at 117 volts for voltage readings.
5 - Nominal tolerance on component values makes possible a variation of ± 15% in voltage and resistance readings.
6 - All controls at minimum, proper output load connected.

PHOTOFACT* Folder

**TRUETONE**
**MODELS 2D1095, 2D2052**

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MODEL 2D2052

TRUETONE
MODELS 2D1095, 2D2052

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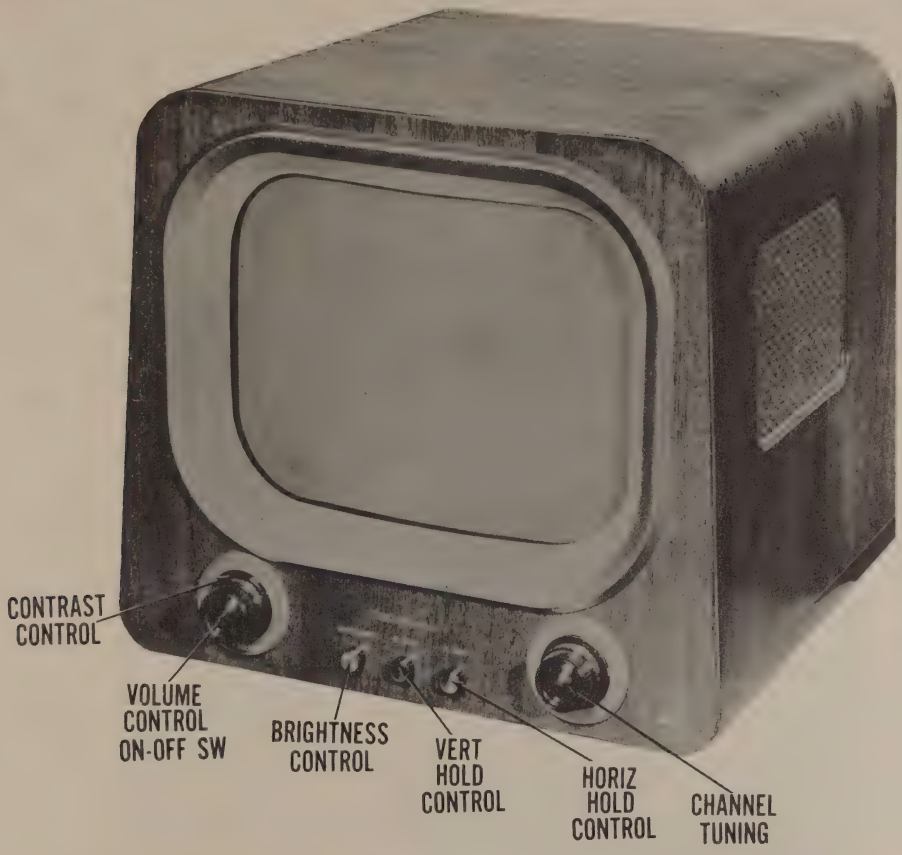
DATE 5-51 SET 134 FOLDER 11




TRUETONE
MODELS 2D1095, 2D2052

TRUETONE MODEL 2D2052

| | |
|---|---|
| TRADE NAME | Truetone Models 2D1095, 2D2052 |
| SUPPLIER | Western Auto Supply Co., 2107 Grand Ave., Kansas City, Mo. |
| TYPE SET | Television Receiver |
| TUBES | Twenty Two |
| POWER SUPPLY | 110-120 Volts AC-60 Cycle |
| RATING | 2 Amp. @ 117 Volts AC |
| TUNING RANGE | Channels 2 thru 13 |

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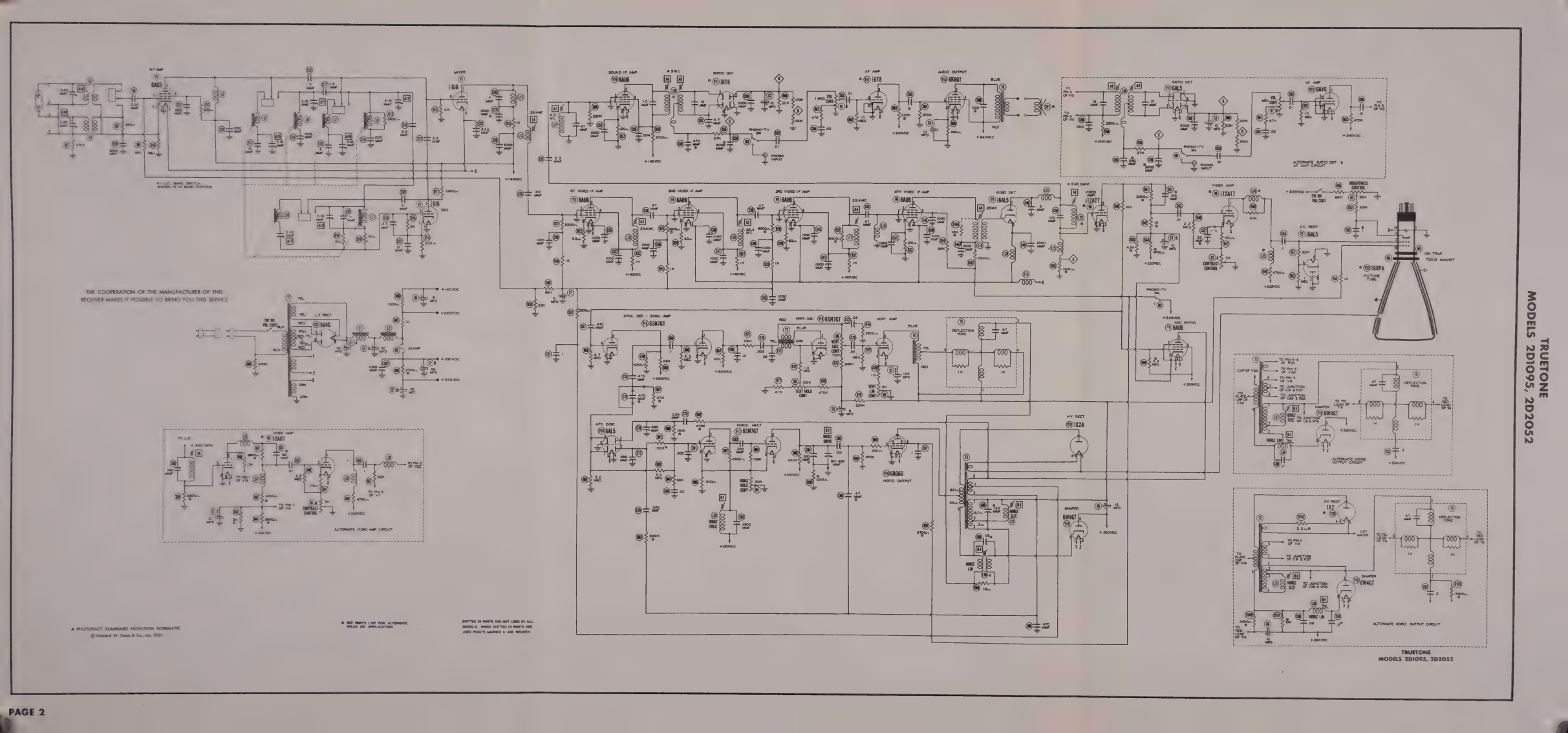
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A PHOTOFACT STANDARD NOTATION SCHEMATIC
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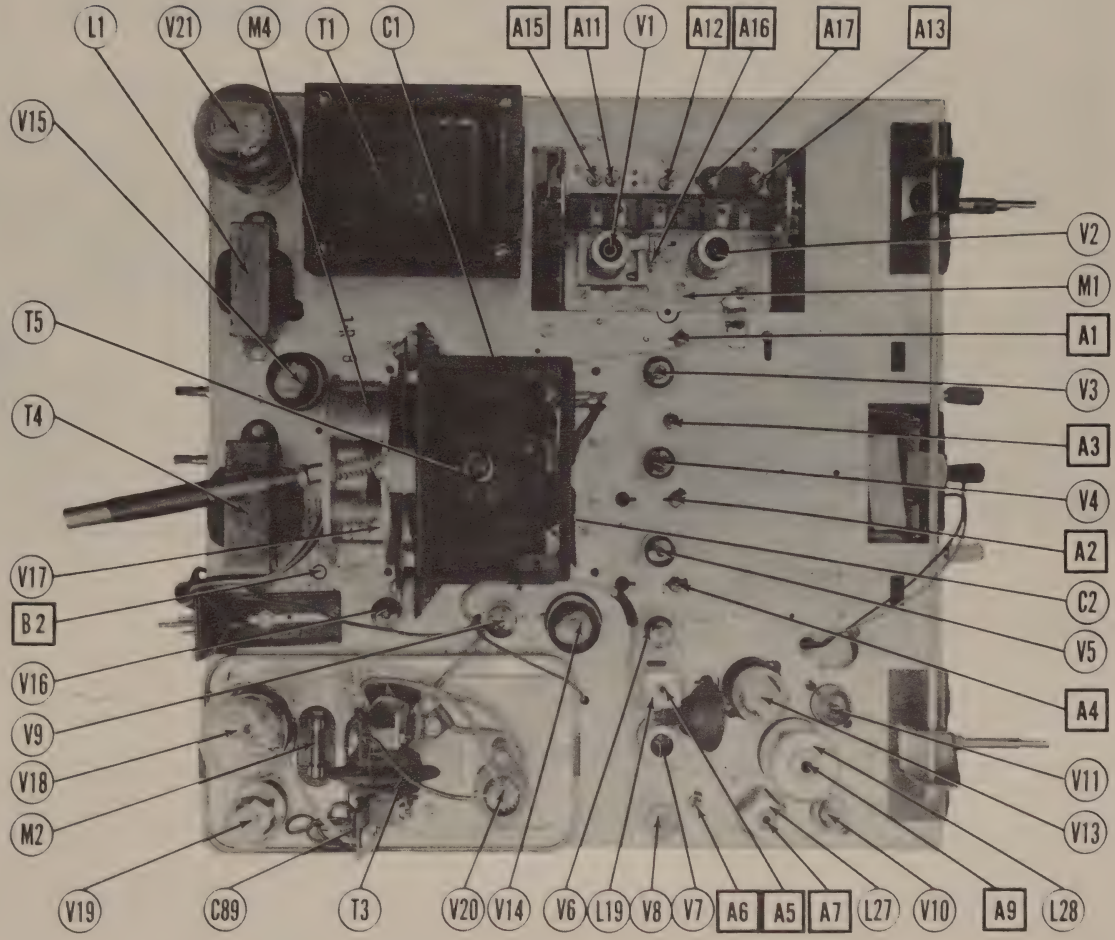
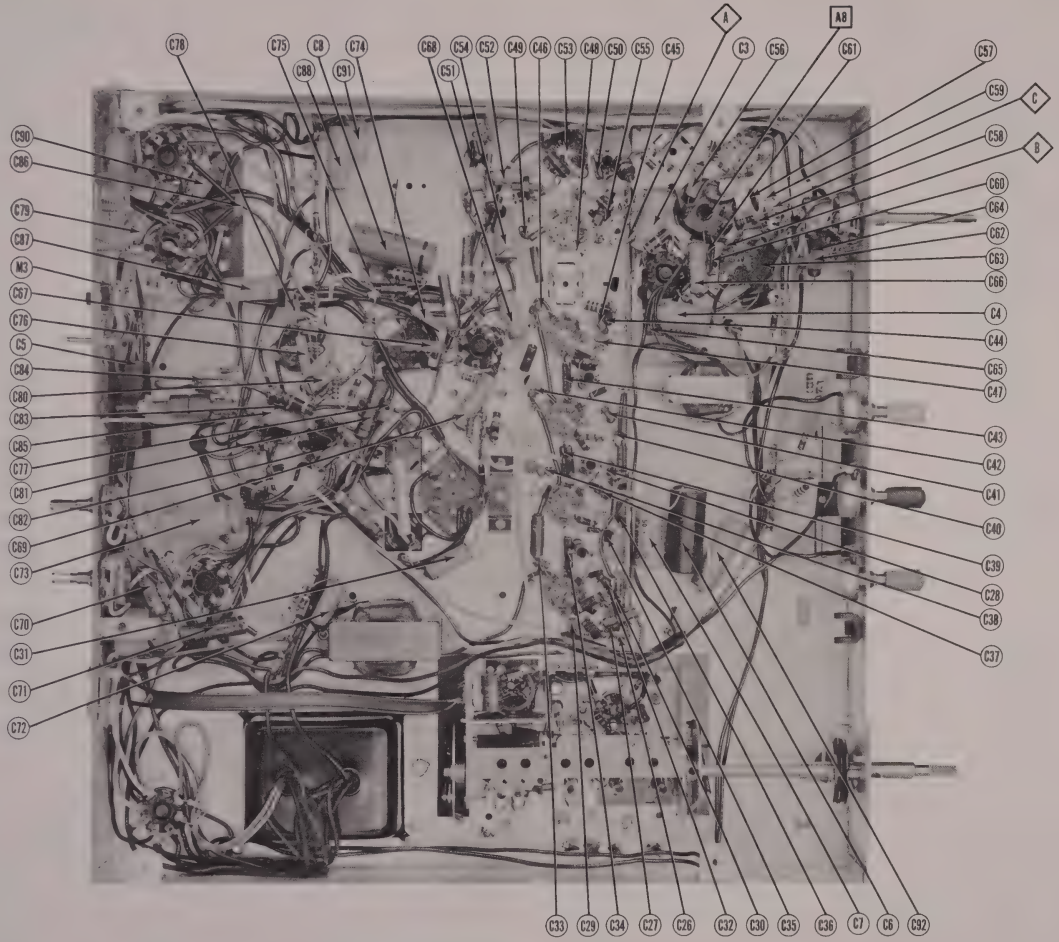
* SEE PARTS LIST FOR ALTERNATE VALUE OR APPLICATION
DOTTED IN PARTS ARE NOT USED IN ALL MODELS. WHEN DOTTED IN PARTS ARE USED POINTS MARKED X ARE BROKEN
ALTERNATE RATIO DET & AF AMP CIRCUIT
ALTERNATE VIDEO AMP CIRCUIT
ALTERNATE HORIZ OUTPUT CIRCUIT
TRUETONE
MODELS 2D1095, 2D2052

TRUETONE
MODELS 2D1095, 2D2052

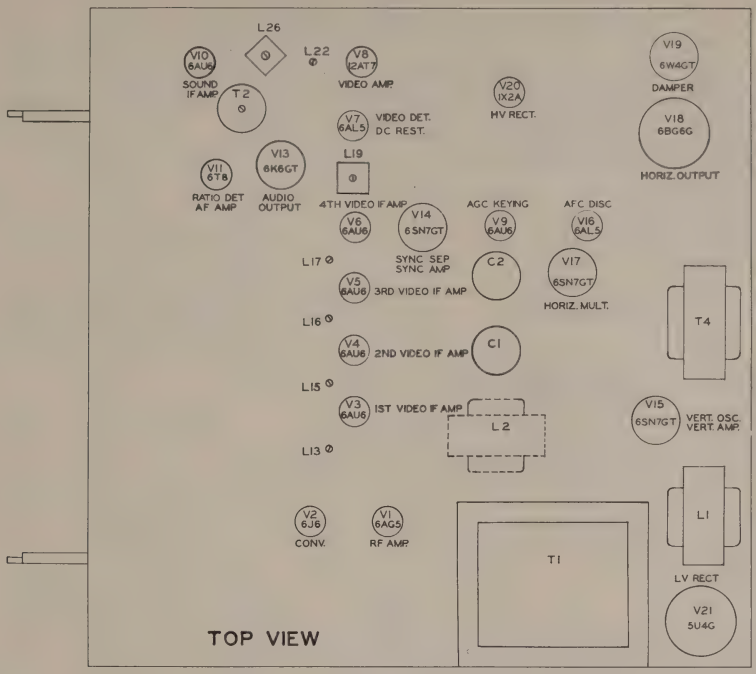


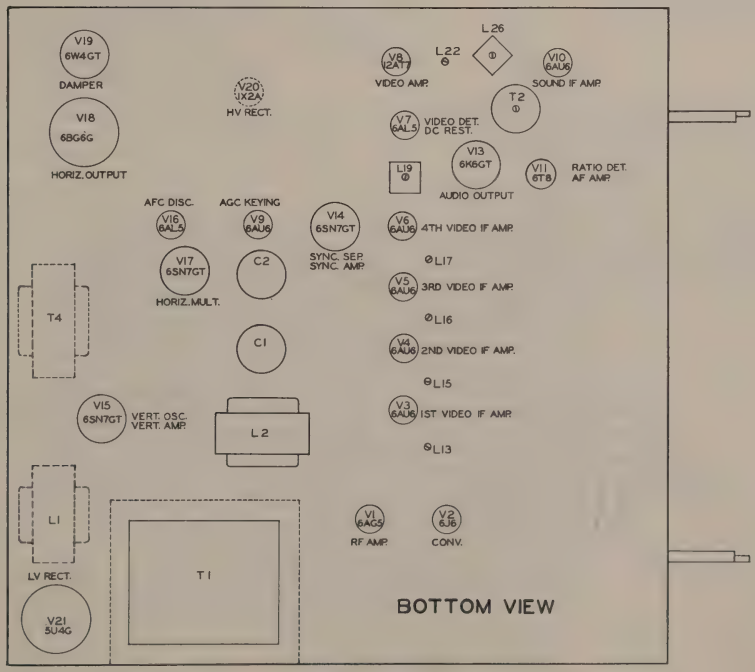

CHASSIS TOP VIEW

TRUETONE
MODELS 2D1095, 2D2052




CHASSIS BOTTOM VIEW-CAPACITOR AND ALIGNMENT IDENTIFICATION




# TUBE PLACEMENT CHART

# ALIGNMENT INSTRUCTIONS

**ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT**

The end of the high voltage lead should be securely taped and kept away from the chassis. Do not remove the horizontal oscillator tube to kill the high voltage.

**VIDEO IF ALIGNMENT**

Remove the converter tube (V2) from its socket and replace it with a 6J6 which has pin 2 removed.
Connect the negative lead of a 3 volt battery to the junction of R20 and C7, connect the positive lead to chassis.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 1. | Direct | High side to ungrounded tube shield floating over dummy converter tube (V2). Low side to chassis. | Not used | 26.4MC | Any | Use VTVM. DC Probe to Point (A). Common to chassis. | A1, A2 | Adjust for maximum deflection. |
| 2. | Direct | " | " | 23.4MC | " | " | A3, A4 | " |
| 3. | Direct | " | " | 25MC | " | " | A5 | " |
| 4. | Direct | " | 25MC (10MC SWP) | 23.0MC 26.75MC | " | Vert. Amp. to Point (A). Low side to chassis. | A5 | Adjust for maximum deflection. Check for response curve similar to figure 1. If necessary retouch A5 for proper response. |

**4.5MC TRAP ADJUSTMENT**

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 5. | .001MFD | High side to pin 1 (cathode) of 6AL5 (V7). Low side to chassis. | Not used | 4.5MC (400∿ Mod.) | Any | Vert. Amp. to pin 1 (plate) of 12AT7 (V8). Low side to chassis. | A6 | Adjust for MINIMUM 400∿ indication on scope. |

**SOUND IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM**

Connect two matched 100KΩ (± 1%) resistors in series from Point B to chassis. The junction of these two resistors is alignment Point D as shown on the schematic.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | CHANNEL | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 6. | .001MFD | High side to pin 1 (cathode) of 6AL5 (V7). Low side to chassis. | 4.5MC (Unmod.) | Any | DC Probe to Point (B). Common to chassis. | A7, A8 | Adjust for maximum deflection. |
| 7. | .001MFD | " | " | " | DC Probe to Point (C). Common to Point (D). | A9 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. |

**SOUND IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE**

Use frequency modulated signal with 60∿ modulation and 450KC sweep. Use 120∿ sawtooth voltage in scope for horizontal deflection.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 6. | .001MFD | High side to pin 1 (cathode) of 6AL5 (V7). Low side to chassis. | 4.5MC (450KC SWP) | 4.5MC | Any | Vert. Amp. to Point (B). Low side to chassis. | A7, A8 | Disconnect stabilizer capacitor C3. Adjust for maximum amplitude and symmetry as per figure 2. |
| 7. | .001MFD | " | " | " | " | Vert. Amp. to Point (C) Low side to chassis. | A9 | Reconnect capacitor C3. Adjust A9 so 4.5MC occurs at center of crossover lines as per figure 3. SLIGHTLY retouch A8 for maximum amplitude and straightness of crossover lines. |

**TUNER ALIGNMENT**

Pre-set the adjusting screws as shown in figure 5.
Turn the tuning shaft until the tuning core carriage is at the top of its stroke.
Pre-set all tuning cores 1.6 inches from the top of the core to the coil mounting strip. Then turn the low band oscillator core (L11) an additional 4 turns out of the coil.
Remove the dummy converter tube and replace the original 6J6 in its socket.

**LOW BAND TUNER ALIGNMENT**

Turn the tuning control until the cores are at the extreme top of their stroke with the switch in "low band" position.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 8. | Two 120Ω carbon res. | Across antenna terminals with 120Ω in each lead. | 85MC (10MC SWP) | 83.25MC 87.25MC | 6 | Vert. Amp. to Point (A). Low side to chassis. | A10, A11, A12 | Adjust for maximum amplitude of response with symmetrical peaks. If A-11 shows insufficient range turn L8 core slightly into the coil. |
| 9. | " | " | " | " | " | " | A13 | Adjust to place video marker at 50% on response curve as per figure 4. If necessary repeat step 8. |
| 10. | " | " | 63MC (10MC SWP) | 61.25MC 65.75MC | 3 | " | A11, A12 | Adjust tuning control until video marker appears at 50% on response curve. Adjust A11 and A12 for compromise which will give best overall response across the low band channels. |
| | | | 69MC (10MC SWP) | 67.25MC 71.75MC | 4 | | | |
| | | | 79MC (10MC SWP) | 77.25MC 81.75MC | 5 | | | |
| | | | 57MC (10MC SWP) | 55.25MC 59.75MC | 2 | | | |

FIG. 1

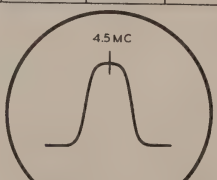


FIG. 2

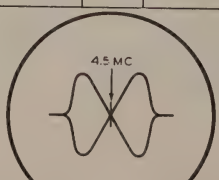


FIG. 3

FIG. 4

# ALIGNMENT INSTRUCTIONS (CONT.)

HIGH BAND TUNER ALIGNMENT

Turn the tuning control until the cores are at the extreme top of their stroke with the switch to "high band" position.

| | DUMMY ANTENNA | SWEEP GENERATOR COUPLING | SWEEP GENERATOR FREQUENCY | MARKER GENERATOR FREQUENCY | CHANNEL | CONNECT SCOPE | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 11. | Two 120Ω carbon res. | Across antenna terminals with 120Ω in each lead. | 213MC (10MC SWP) | 211.25MC 215.75MC | 13 | Vert. Amp. to Point A. Low side to chassis. | A14, A15, A16 | Adjust for maximum amplitude of response with symmetrical peaks. |
| 12. | " | " | " | " | " | " | A17 | Adjust to place video marker at 50% on response curve as per figure 4. If necessary repeat step 11. |
| 13. | " | " | 207MC (10MC SWP) | 205.25MC 209.75MC | 12 | " | A15, A16 | Adjust tuning control to place video marker at 50% on response curve. Adjust A15 and A16 for compromise which will give best overall response across the high band channels. |
| | | | 201MC (10MC SWP) | 199.25MC 203.75MC | 11 | | | |
| | | | 195MC (10MC SWP) | 193.25MC 197.75MC | 10 | | | |
| | | | 189MC (10MC SWP) | 187.25MC 191.75MC | 9 | | | |
| | | | 183MC (10MC SWP) | 181.25MC 185.75MC | 8 | | | |
| | | | 177MC (10MC SWP) | 175.25MC 179.75MC | 7 | | | |

The dimensions shown are approx. from the shoulder of screw head to mounting base

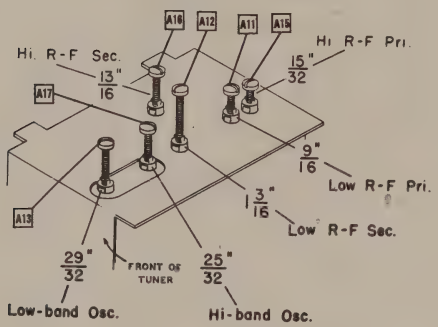
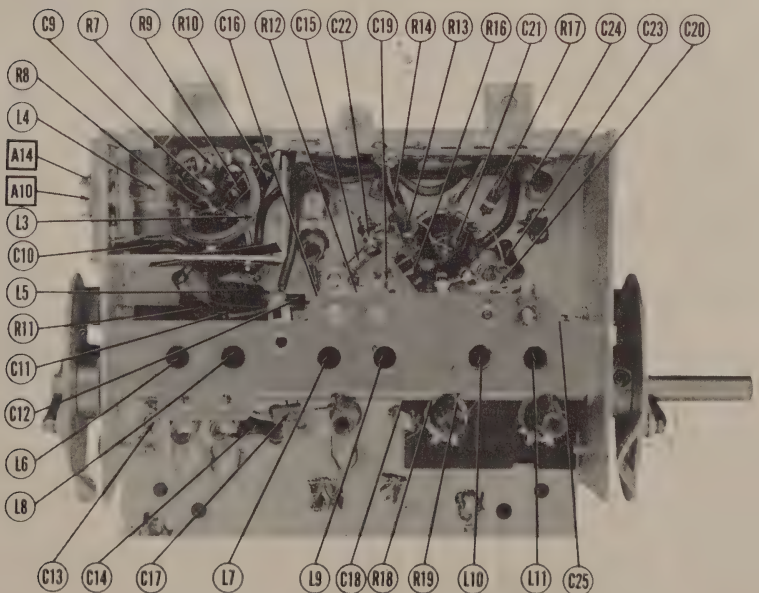



FIG. 5




RF TUNER-BOTTOM VIEW

# VOLTAGE AND RESISTANCE MEASUREMENTS

VOLTAGE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6AG5 | 0V | .6VDC | 6.3VAC | 0V | 135VDC | 130VDC | .6VDC | | |
| V 2 | 6J6 | 130VDC | 80VDC | 6.3VAC | 0V | §-1VDC | 0V | 2.8VDC | | |
| V 3 | 6AU6 | 0V | 0V | 0V | 6.3VAC | 130VDC | 130VDC | 1VDC | | |
| V 4 | 6AU6 | 0V | 0V | 0V | 6.3VAC | 130VDC | 130VDC | 1VDC | | |
| V 5 | 6AU6 | 0V | 0V | 0V | 6.3VAC | 130VDC | 130VDC | 1VDC | | |
| V 6 | 6AU6 | 0V | 0V | 0V | 6.3VAC | 285VDC | 135VDC | 1.2VDC | | |
| V 7 | 6AL5 | 0V | 0V | 5.7VDC | 0V | 1.4VDC | 0V | -3.8VDC | | |
| V 8 | 12AT7 | 140VDC | .5VDC | 40VDC | 6.3VAC | 6.3VAC | 125VDC | -.4VDC | 0V | 0V |
| V 9 | 6AU6 | 125VDC | 155VDC | ¶ 155VDC | ¶ 155VDC | • | 320VDC | 155VDC | | |
| V 10 | 6AU6 | 0V | 0V | 0V | 6.3VAC | 115VDC | 115VDC | 1VDC | | |
| V 11 | 6T8 | -.2VDC | -.4VDC | -.2VDC | 0V | 6.3VAC | 0V | 0V | -.4VDC | 80VDC |
| V 12 | 6AV6 | NOT USED IN ALL MODELS | | | | | | | | |
| V 13 | 6K6GT | 0V | 0V | 230VDC | 240VDC | 0V | 0V | 6.3VAC | 18VDC | |
| V 14 | 6SN7GT | -1.5VDC | 70VDC | 0V | -1.6VDC | 35VDC | 0V | 6.3VAC | 0V | |
| V 15 | 6SN7GT | -2.6VDC -7.3VDC | 105VDC | 0V | 0V | 430VDC | 25VDC 15VDC | 6.3VAC | 0V | |
| V 16 | 6AL5 | 2.6VDC | -.3VDC | 6.3VAC | 0V | 2.6VDC | 0V | -.2VDC | | |
| V 17 | 6SN7GT | -4VDC -5.6VDC | 115VDC | 12VDC | -.1VDC | 290VDC | 12VDC | 6.3VAC | 0V | |
| V 18 | 6BG6G | -.2VDC | 0V | 0V | -.4VDC | -18VDC | -18VDC | 6.3VAC | 270VDC | TOP CAP • |
| V 19 | 6W4GT | 440VDC | • | 440VDC | • | 320VDC | • | ¶ 155VDC | ¶ 155VDC | |
| V 20 | 1X2A | • DO NOT MEASURE | | | | | | | | |
| V 21 | 5U4G | 0V | 340VDC | ▲ | 340VAC | ▲ | 340VAC | 320VDC | 340VDC | |
| V 22 | 16RP4 | 0V | 1.2VDC | PIN 10 430VDC | PIN 95VDC | 11 0V | PIN 12 6.3VAC | | | |

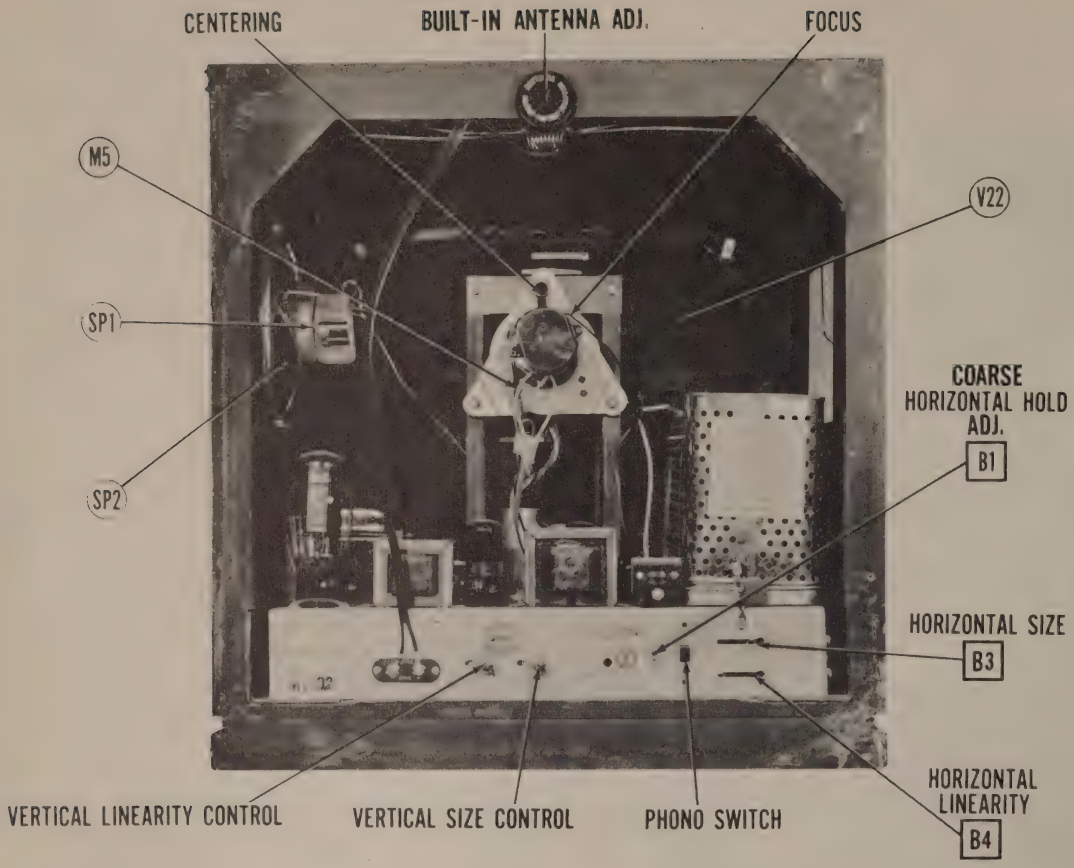
RESISTANCE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6AG5 | 43KΩ | 68Ω | .1Ω | 0Ω | †2.3KΩ | †3.3KΩ | 68Ω | | |
| V 2 | 6J6 | †3.3KΩ | †7.9KΩ | .1Ω | 0Ω | 10KΩ | 10KΩ | 220Ω | | |
| V 3 | 6AU6 | 90KΩ | 0Ω | 0Ω | .1Ω | †3.3KΩ | †3.3KΩ | 82Ω | | |
| V 4 | 6AU6 | 90KΩ | 0Ω | 0Ω | .1Ω | †3.3KΩ | †3.3KΩ | 82Ω | | |
| V 5 | 6AU6 | 90KΩ | 0Ω | 0Ω | .1Ω | †3.3KΩ | †3.3KΩ | 82Ω | | |
| V 6 | 6AU6 | 2.3KΩ | 0Ω | 0Ω | .1Ω | †5.7KΩ | †68KΩ | 120Ω | | |
| V 7 | 6AL5 | .9Ω | 0Ω | 1.2Ω | 0Ω | 1 Meg. | 0Ω | 3.9KΩ | | |
| V 8 | 12AT7 | †5.8KΩ | 2.2 Meg. | 5.1KΩ | .1Ω | .1Ω | †9KΩ | 3.9KΩ | 0Ω | 0Ω |
| V 9 | 6AU6 | †20KΩ | †5.8KΩ | †5.8KΩ | †5.8KΩ | 90KΩ | †70Ω | †5.8KΩ | | |
| V 10 | 6AU6 | 3.1Ω | 0Ω | 0Ω | .1Ω | †4.5KΩ | †4.5KΩ | 120Ω | | |
| V 11 | 6T8 | Inf. | 22KΩ | Inf. | 0Ω | .1Ω | 0Ω | 0Ω | 10 Meg. | †220KΩ |
| V 12 | 6AV6 | NOT USED IN ALL MODELS. | | | | | | | | |
| V 13 | 6K6GT | Inf. | 0Ω | †3.3KΩ | †2.8KΩ | 470KΩ | Inf. | .1Ω | 680Ω | |
| V 14 | 6SN7GT | 2.2 Meg. | †47KΩ | 0Ω | 4.7 Meg. | †30KΩ | 0Ω | .1Ω | 0Ω | |
| V 15 | 6SN7GT | 1.5 Meg. 1.6 Meg. | #1.1 Meg. | 0Ω | 1 Meg. | #800Ω | 6KΩ 1KΩ | .1Ω | 0Ω | |
| V 16 | 6AL5 | 2.2 Meg. | 150KΩ | .1Ω | 0Ω | 2.2 Meg. | 0Ω | 4.5 Meg. | | |
| V 17 | 6SN7GT | 100KΩ 150KΩ | †220KΩ | 1.5KΩ | 4.4 Meg. | †5.8KΩ | 1.5KΩ | .1Ω | 0Ω | |
| V 18 | 6BG6G | 4.5 Meg. | 0Ω | 0Ω | 340KΩ | 470KΩ | 470KΩ | .1Ω | †4.8KΩ | TOP CAP #60Ω |
| V 19 | 6W4GT | #8Ω | 90KΩ | 400KΩ | 550KΩ | †70Ω | 90KΩ | †5.8KΩ | †5.8KΩ | |
| V 20 | 1X2A | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | Inf. | TOP CAP #660Ω |
| V 21 | 5U4G | Inf. | 35KΩ | 470KΩ | 30Ω | 470KΩ | 30Ω | †70Ω | 35KΩ | |
| V 22 | 16RP4 | 0Ω | 1 Meg. | PIN 10 #1KΩ | PIN 100KΩ | 11 150KΩ | PIN 12 .1Ω | | | |

§ TAKEN WITH VACUUM TUBE VOLTMETER
• DO NOT MEASURE
▲ 117VAC MEASURED ACROSS PINS 3 AND 5 OF V21
¶ 6.3VAC MEASURED ACROSS FILAMENTS
PHONO-TV SWITCH IN TV POSITION

† MEASURED FROM PIN 8 OF V21
# MEASURED FROM PIN 3 OF V19
PHONO-TV SWITCH IN TV POSITION

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltage measured at 1,000 ohms.
2. Pin numbers are counted in a clockwise direction on bottom of socket.
3. Measured values are from socket pin to common negative unless otherwise stated.
4. Line voltage maintained at 117 volts for voltage readings.
5. Front panels controls set at minimum.
6. Where readings may vary according to the setting of the service controls, both minimum and maximum readings are given.




CABINET–REAR VIEW

## HORIZONTAL SWEEP CIRCUIT ADJUSTMENTS

Turn the set on and tune in a TV station, preferably a test pattern.

Turn the horizontal hold control to the mid-position of its range.

Adjust the horizontal frequency slug (B1) until the picture synchronizes horizontally.

Adjust the horizontal drive trimmer (B2) counter clockwise until vertical white lines appear in the picture, and then clockwise 1/2 turn farther than required to just remove the white lines.

Adjust the horizontal size slug until the picture fills the tube horizontally.

Adjust the horizontal linearity slug until the picture is symmetrical from left to right.

# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA | | RMA BASE TYPE | NOTES |
|---|---|---|---|---|---|
| | | TRUETONE PART No. | STANDARD REPLACEMENT | | |
| V1 | RF Amp. | 6AG5 | 6AG5 | 7BD | |
| V2 | Converter | 6J6 | 6J6 | 7BF | |
| V3 | 1st Video IF Amp. | 6AU6 | 6AU6 | 7BK | |
| V4 | 2nd Video IF Amp. | 6AU6 | 6AU6 | 7BK | |
| V5 | 3rd Video IF Amp. | 6AU6 | 6AU6 | 7BK | |
| V6 | 4th Video IF Amp. | 6AU6 | 6AU6 | 7BK | |
| V7 | Video Det.-DC Restorer | 6AL5 | 6AL5 | 6BT | |
| V8 | Video Amp. | 12AT7 | 12AT7 | 9A | |
| V9 | AGC Keying | 6AU6 | 6AU6 | 7BK | |
| V10 | Sound IF Amp. | 6AU6 | 6AU6 | 7BK | |
| V11A | Ratio Det.-AF Amp. | 6T8 | 6T8 | 9E | |
| B | Ratio Det. | 6AL5 | 6AL5 | 6BT | |
| V12 | AF Amp. | 6AV6 | 6AV6 | 7BT | Not used in models using V11A. |
| V13 | Audio Output | 6K6GT | 6K6GT | 7S | |
| V14 | Sync. Sep.-Sync. Amplifier | 6SN7GT | 6SN7GT | 8BD | |
| V15 | Vert. Osc.-Vert. Amp. | 6SN7GT | 6SN7GT | 8BD | |
| V16 | AFC Discr. | 6AL5 | 6AL5 | 6BT | |
| V17 | Horiz. Mult. | 6SN7GT | 6SN7GT | 8BD | |
| V18 | Horiz. Output | 6BG6G | 6BG6G | 5BT | |
| V19 | Damper | 6W4GT | 6W4GT | 4CG | |
| V20A | H.V. Rectifier | 1X2A | 1X2A | 7CB | |
| B | H.V. Rectifier | 1X2 | 1X2 | 7CB | |
| V21 | L.V. Rectifier | 5U4G | 5U4G | 5T | |
| V22 | Picture Tube | 16RP4 | 16RP4 | 12D | |

## CAPACITORS

**Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

| ITEM No. | RATING | | REPLACEMENT DATA | | | | | | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | CAP. | VOLT | TRUETONE PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | |
| C1A | 30 | 450 | A-8C-17845 | AFH3666J | | UPT36145 | | TVL-3790 | ● Filter |
| B | 60 | 400 | | | | | | | ■ Filter |
| C | 10 | 450 | | | | | | | ▲ Decoupling |
| C2A | 30 | 450 | A-8C-18487 | AF66J4A | | UPT409 | | TVL-3706 | ● Filter |
| B | 30 | 450 | | PRS25/100 | | | | | ■ Filter |
| C | 125 | 25 | | | | | | | ▲ Vert. Output Cath. |
| C3 | 10 | 50 | A-8C-17183 | PRS50/10 | | BR105 | | TVA-1304 | Stabilizing Cap. |
| C4 | 10 | 50 | A-8C-17183 | PRS50/10 | | BR105 | | TVA-1304 | Output Cath. Bypass |
| C5 | 8 | 450 | A-8C-13453 | PRS450/8 | | BR845A | | TVA-1704 | Decoupling |
| C6 | 8 | 450 | A-8C-13453 | PRS450/8 | | BR845A | | TVA-1704 | Decoupling |
| C7 | 5 | 50 | B-8C-11751 | PRS150/4 | | BR105 | | TVA-1303 | AGC Filter |
| C8 | 10 | 150 | A-8C-11495 | PRS150/12 | | BR1015 | | TVA-1406 | Decoupling |
| C9 | 220 | | C-8G-16045 | SI220 | D6-221 | | GP2K-220 | 19C13 | RF Coupling |
| C10 | 5000 | | A-8G-13962 | BPD-005 | DD-502 | | 811-005 | 29C1 | RF Amp. Cathode |
| C11 | 1000 | | C-8G-13201 | SI1000 | D6-102 | | GP2L-001 | 19C1 | RF Amp. Screen |
| C12 | .5 | | A-8G-12495-7 | | TCZ-.5 | | | | RF Coupling |
| C13 | 15 | | C-8G-17305 | | TCZ-15 | | NPOK-15 | 19C5 | Fixed Trimmer |
| C14 | 1000 | | C-8G-13201 | SI1000 | D6-102 | | GP2L-001 | 19C1 | RF Bypass |
| C15 | 4 | | C-8G-11893 | | | | NPOK-4 | | Fixed Trimmer |
| C16 | 1000 | | C-8G-13201 | SI1000 | D6-102 | | GP2L-001 | 19C1 | RF Bypass |
| C17 | 1.5 | | A-8G-12495-4 | SI1.5NPO | TCZ-1.5 | | NPOK-1.5 | | RF Coupling |
| C18 | 2.2 | | A-8G-12495-4 | | TCZ-2.2 | | | | Osc. Coupling |
| C19 | 2.5 | | C-8G-15737 | | | | | | Osc. Grid Cap |
| C20 | 51 | | A-8G-11891 | SI50N750 | TCN-51 | | N750L-51 | | Osc. Feedback |
| C21 | 2.2 | | A-8G-12495-4 | | TCZ-2.2 | | | | Osc. Coupling |
| C22 | 51 | | A-8G-11891 | SI50 | TCN-51 | | N750L-51 | 19C9 | Conv. Cath. Bypass |
| C23 | 220 | | C-8G-16045 | SI220 | D6-221 | | GP2K-220 | 19C13 | Conv. Fil. Bypass |
| C24 | 1000 | | C-8G-13201 | SI1000 | D6-102 | | GP2L-001 | 19C1 | RF Bypass |
| C25 | 7 | | C-8G-15224 | | | | N750K-7 | | Fixed Trimmer |
| C26 | 7 | | C-8G-11790 | | TCZ-6.8 | | NPOK-6.8 | | Fixed Trimmer |
| C27 | 5000 | | A-8G-13962 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | Conv. Plate Dec. |
| C28 | 5000 | | A-8G-13962 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | RF Bypass |
| C29 | 100 | 500 | C-8F3-8 | 1468-0001 | D6-101 | 5W5T1 | GP1K-100 | 19C11 | IF Coupling |
| C30 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | AGC Filter |
| C31 | .1 | 200 | C-8D-17259 | P288-1 | DF-104 | PTE4P1 | | 2TM-P1 | AGC Filter |
| C32 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | 1st V. IF Dec. |
| C33 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | 1stV. IF Fil. |
| C34 | 47 | 500 | C-8F3-109 | 1468-00005 | D6-470 | 5W5Q5 | GP1K-47 | 1FM-45 | IF Coupling |
| C35 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | AGC Filter |
| C36 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | AGC Filter |
| C37 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | 2nd V. IF Dec. |
| C38 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | 2nd V. IF Fil. |
| C39 | 47 | 500 | C-8F3-109 | 1468-00005 | D6-470 | 5W5Q5 | GP1K-47 | 1FM-45 | IF Coupling |
| C40 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | AGC Filter |
| C41 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | 3rd V. IF Dec. |
| C42 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | 3rd V. IF Fil. |
| C43 | 47 | 500 | C-8F3-109 | 1468-00005 | D6-470 | 5W5Q5 | GP1K-47 | 1FM-45 | IF Coupling |
| C44 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | 4th V. IF Plate Dec. |
| C45 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | 4th V. IF Screen |
| C46 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | 4th V. IF Fil. |
| C47 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | 4th V. IF Cath. |
| C48 | 5 | | C-8G-12166 | SI5NPO | TCZ-4.7 | 5N5V5 | NPOK-5 | MS-55 | V. Diode Filter |
| C49 | 1000 | | C-8G-13201 | SI1000 | D6-102 | 1W5D1 | GP2L-001 | 19C1 | V. Det.-DC Res. Fil. |
| C50 | 100 | 500 | C-8F3-111 | 1469-0001 | TCZ-100 | 5R5T1 | NPOM-100 | MS-31 | Fixed Trimmer |
| C51 | 100 | 500 | C-8F3-111 | 1469-0001 | TCZ-100 | 5R5T1 | NPOM-100 | MS-31 | Peaking Note 1. |
| C52 | .01 | 400 | C-8D-17270 | P488-01 | D6-103 | PTE4S1 | 821-01 | 4TM-S1 | Video Coupling |
| C53 | 22 | | | SI22 | D6-220 | 5W5Q25 | GP1K-22 | 19C23 | V. Amp. Cath. † |
| C54 | .1 | 400 | C-8D-10983 | P488-1 | DF-104 | PTE4P1 | | 4TM-P1 | Video Coupling |
| C55 | 3.3 | | A-8G-12495-3 | SI3.3NPO | TCZ-3.3 | | NPOK-3.3 | | S. IF Coupling |
| C56 | .004 | 400 | C-8D-17958 | P888-004 | D6-402 | PTE6D4 | GP2M-004 | 6TM-D4 | S. IF Decoupling |
| C57 | 5000 | | A-8G-13962 | BPD-005 | DD-502 | 1D5D5 | 811-005 | 29C1 | S. IF Cathode |
| C58 | 470 | 500 | C-8F3-131 | 1468-0005 | D6-471 | 5W5T5 | GP2K-470 | 1FM-35 | Diode Load Cap * |
| C59 | 2000 | | C-8G-16049 | SI2000 | D6-202 | 1W5D2 | GP2M-002 | 29C2 | De-emphasis Note 4. |

# PARTS LIST AND DESCRIPTIONS (Continued)

## CAPACITORS (CONT.)

| ITEM No. | RATING CAP | VOLT | REPLACEMENT DATA TRUETONE PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C60 | 5000 | | A-SG-13962 | BPD-005 | DD-502 | DD505 | 811-005 | 29C1 | RF Bypass |
| C61 | 4.7 | | | SH4.7MPO | TCE-4.7 | SR5VS | NPOH-4.7 | MS-55 | Balancing |
| C62 | .01 | 300 | C-SD-17258 | P488-01 | D6-103 | PTE4SI | 831-01 | 4TM-SI | Audio Coupling |
| C63 | .01 | 300 | C-SD-17258 | P488-01 | D6-103 | PTE4SI | 831-01 | 4TM-SI | Audio Coupling |
| C64 | .002 | 300 | C-SD-17288 | P488-02 | DF-303 | PTE4S2 | | 2TM-S2 | Tone Comp. |
| C65 | .01 | 400 | C-SD-17270 | P488-01 | D6-103 | PTE4SI | 831-01 | 4TM-SI | Audio Coupling |
| C66 | .003 | 600 | C-SD-10789 | P488-002 | D6-302 | PTE6D3 | GP3M-002 | 6TM-D3 | Output Plate Bypass Note 5. |
| C67 | 470 | 500 | C-SF3-121 | 1468-0005 | D6-471 | 5W5T5 | GP3K-470 | 1FM-35 | Sync. Coupling |
| C68 | .1 | 300 | C-SD-17259 | P288-1 | DF-104 | PTE4SI | | 4TM-SI | Sync. Coupling |
| C69 | .01 | 400 | C-SD-10761 | P488-01 | D6-103 | PTE4SI | 831-01 | 4TM-SI | Sync. Amp. Plate |
| C70 | .005 | 600 | C-SD-10935 | P668-005 | D6-502 | PTE6D5 | 811-005 | 6TM-D5 | Vert. Sync. Coupling |
| C71 | .01 | 600 | C-SD-10778 | P668-01 | DF-303 | PTE6D3 | | 6TM-D3 | Vert. Osc. Grid |
| C72 | .05 | 400 | C-SD-14481 | P488-05 | | PTE4S5 | | 4TM-S5 | Vert. Discharge |
| C73 | .25 | 600 | C-SD-13439 | P668-25 | | PTE6P25 | | 6TM-P25 | Vert. Sweep Coupling |
| C74 | 470 | 500 | C-SF3-121 | 1468-0005 | D6-471 | 5W5T5 | GP3K-470 | 1FM-35 | Differentiator Net |
| C75 | 470 | 500 | C-SF3-121 | 1468-0005 | D6-471 | 5W5T5 | GP3K-470 | 1FM-35 | Hor. Sync. Coupling † |
| C76 | 680 | 500 | C-SF3-123 | S1890 | D6-681 | 1W5T5 | GP3K-680 | 1FM-37 | Voltage Divider |
| C77 | 680 | 500 | C-SF3-123 | S1890 | D6-681 | 1W5T7 | GP3K-680 | 1FM-37 | Voltage Divider |
| C78 | 220 | 500 | C-SF3-117 | S1230 | D6-221 | 5W5T5 | GP3K-220 | 1FM-325 | Hor. Feedback |
| C79 | 220 | 500 | C-SF3-117 | S1230 | D6-221 | 5W5T5 | GP3K-220 | 1FM-325 | Hor. Feedback |
| C80 | .02 | 200 | C-SD-17268 | P488-02 | DF-203 | PTE4S2 | | 2TM-S2 | AFC Filter |
| C81 | 002 | 600 | C-SD-10778 | P668-002 | DF-202 | PTE6D2 | GP2M-002 | 6TM-D2 | AFC Filter |
| C82 | 220 | 500 | C-SF3-117 | 1468-00025 | D6-221 | 5W5T5 | GP3K-220 | 1FM-325 | Hor. MV Feedback |
| C83 | 3900 | 500 | C-SF3-123 | 1464-004 | | 1DH1D4 | | MS-34 | Fixed Trimmer |
| C84 | 330 | 500 | | 1468-00025 | D6-331 | 5W5T4 | GP3K-330 | MS-34 | Hor. Discharge ‡ |
| C85 | .001 | 600 | C-SD-12020 | P668-001 | D6-102 | PTE6D1 | GP3L-001 | 6TM-D1 | Hor. Sweep Coupling |
| C86 | 47 | | C-SG-13188 | S847 | D6-470 | 5W5J5 | GP1K-47 | 1PC35 | Hor. Feedback Note 2. |
| C87 | .1 | 400 | C-SD-10983 | P488-1 | DF-104 | PTE4P1 | | 4TM-P1 | Hor. Output Screen |
| C88 | .05 | 200 | | P288-05 | | PTE4S5 | | 2TM-S5 | Damper Filter § Note 3 |
| C89 | 150 | | | | | | | | Fixed Trimmer † |
| C90 | 470 | 500 | C-SF3-121 | 1468-0005 | D6-471 | 5W5T5 | GP3K-470 | 1FM-35 | Voltage Divider |
| C91 | 1000 | 500 | C-SF3-125 | 1467-001 | D6-102 | 1W5T5 | GP3L-001 | 1FM-51 | RF Bypass |
| C92 | .1 | 400 | C-SD-10780 | P488-1 | DF-104 | PTE4P1 | | 4TM-P1 | Pic. Tube Cath. † |
| C93 | .5 | 200 | C-SD-11270 | P288-5 | | GT2P5 | | 2TM-P5 | Hor. Sweep Coupling |
| C94 | .3 | 300 | C-SD-17257 | P488-32 | | GT4P3 | | 3TM-32 | Damper Filter † |

* Some models use 560MMF in this application. Mfgrs. part # C-8F3-122.
† Not used in all models.
‡ Some models use 390 MMF in this application. Mfgrs. part # C-8F3-120.
§ Some models use .1MFD in this application. Mfgrs part # C-SD-10771.
◆ Some models use 1000MMF in this application. Mfgrs. part # C-8G-13301.
Note 1. Some models used 680MMF in this application. Mfgrs. part # C-8F3-121.
Note 2. Some models used 10MMF in this application. Mfgrs. part # C-8G-12199.
Note 3. Some models used .05MFD in this application. Mfgrs. part # C-SD-10983.
Note 4. Some models used 470MMF in this application. Mfgrs. part # C-8F3-12.
Note5. Some models used .01MFD in this application. Mfgrs. part # C-8D-10761.

## CONTROLS

| ITEM No. | RATING RESISTANCE | WATTS | REPLACEMENT DATA TRUETONE PART No. | IRC PART No. | CLAROSTAT PART No. | CENTRALAB PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| R1A | 5000Ω | ½ | A-10A-18441 | | RTV-218 | SBBT-61T-B | Contrast control - panel |
| B | 1 meg | ½ | | | | | Volume control and SW tap④ 90KΩ - rear |
| R2A | 500KΩ | ½ | A-10B-17754 | QU-123 | AG-44-S | AN-31 | Brightness control |
| B | Shaft | | Not req. | Not req. | K38-3 | AK-4 | Attach to R2A per instructions |
| R3A | 100KΩ | ½ | A-10B-17275 | QU-128 | AG-49-S | AN-40 | Vert. hold control |
| B | Shaft | | Not req. | Not req. | K38-3 | AK-4 | Attach to R3A per instructions |
| R4A | 50K | ½ | A-10B-17764 | QU-133 | AG-44-S | AN-31 | Horizontal hold control |
| B | Shaft | | Not req. | Not req. | K38-3 | AK-4 | Attach to R4A per instructions |
| R5A | 5000Ω | ½ | A-10B-17756 | QU-114 | AM-19-S | AN-10 | Vert. linearity control |
| B | Shaft | | Not req. | Not req. | FK3-1/4 | AK-1 | Attach to R5A per instructions |
| R6A | 750KΩ | ½ | A-10B-18240 | | AG-61-S | AN-89 | Vert. size control |
| B | Shaft | | Not req. | | FK3-1/4 | AK-1 | Attach to R6A per instructions |

## RESISTORS

| ITEM No. | RATING RESISTANCE | WATTS | REPLACEMENT DATA TRUETONE PART No. | IRC PART No. | IDENTIFICATION CODES ALL RESISTORS ARE ± 10% UNLESS OTHERWISE STATED |
|---|---|---|---|---|---|
| R7 | 470KΩ | ½ | C-9B1-94 | BTS-470 K | Antenna Isolator |
| R8 | 680Ω | ½ | C-9B1-80 | BTS-680 | Antenna Coil Shunt |
| R9 | 10KΩ | ½ | C-9B1-74 | | RF Amp. Grid |
| R10 | 68Ω | ½ | C-9B1-46 | | RF Amp. Cathode |
| R11 | 1000Ω 20% | ½ | C-9B1-13 | BTS-1000 | RF Amp. Decoup |
| R12 | 5600Ω | ½ | C-9B1-71 | | RF Coil Shunt |
| R13 | 10KΩ | ½ | C-9B1-74 | | Converter Grid |
| R14 | 220Ω | ½ | C-9B1-54 | BTS-220 | Converter Cathode |
| R15 | 1000Ω | ½ | C-9B1-13 | BTS-1000 | Converter Decoup |
| R16 | 10KΩ | ½ | C-9B1-74 | | Osc. Grid |
| R17 | 5600Ω | ½ | C-9B1-71 | | Osc. Plate |
| R18 | 10Ω | ½ | C-9B1-38 | | Parasitic Supp |
| R19 | 10Ω | ½ | C-9B1-38 | | Parasitic Supp |
| R20 | 1000Ω | ½ | C-9B1-62 | BTS-1000 | AGC Network |
| R21 | 8200Ω | ½ | C-9B1-73 | | 1st Video IF Amp. Grid |
| R22 | 82Ω | ½ | C-9B1-49 | BTS-82 | 1st Video IF Amp. Cathode |
| R23 | 1000Ω 20% | ½ | C-9B1-13 | BTS-1000 | 1st Video IF Amp. Decoup |
| R24 | 1000Ω 20% | ½ | C-9B1-13 | BTS-1000 | AGC Network |
| R25 | 68000Ω 20% | ½ | | | 2nd Video IF Amp. Grid - See Note 8 |
| R26 | 82Ω | ½ | C-9B1-49 | BTS-82 | 2nd Video IF Amp. Cathode |
| R27 | 1000Ω 20% | ½ | C-9B1-13 | BTS-1000 | 2nd Video IF Amp. Decoup |
| R28 | 1000Ω 20% | ½ | C-9B1-13 | BTS-1000 | AGC Network |
| R29 | 68000Ω 20% | ½ | | | 3rd Video IF Amp. Grid - See Note 7 |
| R30 | 82Ω | ½ | C-9B1-49 | BTS-82 | 3rd Video IF Amp. Cathode |
| R31 | 1000Ω | ½ | C-9B1-62 | BTS-1000 | 3rd Video IF Amp. Decoup |
| R32 | 68000Ω 20% | ½ | | | 4th Video IF Transformer Shunt - See Note 6 |
| R33 | 120Ω | ½ | C-9B1-51 | BTS-120 | 4th Video IF Amp. Cathode |
| R34 | 68KΩ | ½ | | | 4th Video IF Amp. Screen |
| R35 | 5600Ω | ½ | | | 4th Video IF Amp. Plate Decoup |
| R36 | 3900Ω | ½ | C-9B1-69 | BTS-3900 | Video Det. Diode Load - See Note 7 |
| R37 | 2200Ω | ½ | C-9B1-66 | BTS-2200 | AGC Network |
| R38 | 68KΩ | ½ | C-9B1-84 | BTS-68K | AGC Network |
| R39 | 33KΩ | ½ | C-9B1-80 | BTS-33K | AGC Network |

## RESISTORS (CONT.)

| ITEM No. | RATING RESISTANCE | WATTS | REPLACEMENT DATA TRUETONE PART No. | IRC PART No. | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| R40 | 10KΩ | ½ | C-9B1-74 | BTS-10K | AGC Keying Grid |
| R41 | 2200Ω | ½ | C-9B1-66 | BTS-2200 | 1st Video Amp. Plate - See Note 6 and 8 |
| R42 | 1000Ω | ½ | C-9B1-62 | BTS-1000 | 1st Video Amp. Plate - See Note 9 and 14 |
| R43 | 43KΩ | 2 | | BTS-47K | Voltage Divider - See Note 10 |
| R44 | 4700Ω | 2 | C-9B1-70 | BTS-4700 | Voltage Divider - See Note 11 and 15 |
| R45 | 1000Ω | 10 | C-9B14-1099 | 1 3/4A-1000 | Voltage Divider - Wire Wound |
| R46 | 2.2Meg 5% | 1 | | BTA-2.2Meg-5% | 2nd Video Amp. Grid |
| R47 | 100Ω | ½ | | BTS-100 | 2nd Video Amp. Cathode |
| R48 | 47KΩ | ½ | C-9B2-82 | BTA-47K | Video Peaking Coil Shunt |
| R49 | 4700Ω | 2 | C-9B4-70 | BTB-4700 | 2nd Video Amp. Plate |
| R50 | 1200Ω | 10 | C-9C14-1100 | 1 3/4A-1200 | Voltage Divider - Wire Wound |
| R51 | 22KΩ 20% | ½ | C-9B1-78 | BTS-22K | Picture Tube Grid |
| R52 | 1Meg | ½ | C-9B1-98 | BTS-1Meg | DC Restorer Diode Load |
| R53 | 100KΩ | ½ | C-9B1-86 | BTS-100K | Picture Tube Cathode |
| R54 | 1000Ω | ½ | C-9B1-13 | BTS-1000 | Acc. Anode Load |
| R55 | 68KΩ | ½ | C-9B1-84 | BTS-68K | Voltage Divider |
| R56 | 1200Ω 20% | ½ | C-9B1-90 | | Sound IF Transformer Shunt |
| R57 | 120Ω | ½ | C-9B1-51 | BTS-120 | Sound IF Amp. Cathode |
| R58 | 2700Ω | ½ | C-9B1-66 | BTS-2700 | Sound IF Amp. Decoup |
| R59 | 27KΩ | ½ | C-9B1-79 | BTS-27K | De-emphasis |
| R60 | 22KΩ | ½ | C-9B1-78 | BTS-22K | Det. Diode Load |
| R61 | 47KΩ | ½ | C-9B1-82 | BTS-47K | Tone Compensation |
| R62 | 10Meg 20% | ½ | C-9B1-37 | BTA-10Meg | AF Amp. Grid |
| R63 | 220KΩ | ½ | C-9B1-90 | BTS-220K | AF Amp. Plate - See Note 2 |
| R64 | 470KΩ | ½ | C-9B1-94 | BTS-470K | Output Grid |
| R65 | 680Ω | ½ | C-9B2-80 | BTA-680 | Output Cathode |
| R66 | 2.2Meg 5% | ½ | | BTA-2.2Meg-5% | Sync. Amp. Grid |
| R67 | 47KΩ | ½ | C-9B2-82 | BTA-47K | Sync. Amp. Plate |
| R68 | 4.7Meg | ½ | C-9B1-106 | BTS-4.7Meg | Sync. Sep. Grid |
| R69 | 68KΩ | ½ | C-9B4-84 | BTB-68K | Sync. Sep. Plate |
| R70 | 8200Ω | ½ | C-9B1-73 | BTS-8200 | Voltage Divider |
| R71 | 56KΩ | ½ | C-9B1-83 | BTS-56K | Integrator |
| R72 | 1.5Meg | ½ | C-9B1-100 | BTS-1.5Meg | Vert. Osc. Grid |
| R73 | 220KΩ 5% | ½ | | BTS-220K-5% | Vert. Osc. Plate |
| R74 | 68KΩ | ½ | C-9B1-69 | BTS-3900 | Vert. Peaking |
| R75 | 1Meg | ½ | C-9B1-98 | BTS-1Meg | Vert. Output Grid |
| R76 | 1000Ω | ½ | C-9B1-13 | BTS-1000 | Vert. Output Cathode |
| R77 | 470KΩ | ½ | C-9B1-92 | BTS-470K | Voltage Divider |
| R78 | 470KΩ | ½ | C-9B1-94 | BTS-470K | Voltage Divider |
| R79 | 470KΩ | ½ | C-9B1-90 | BTS-220K | Voltage Divider |
| R80 | 150KΩ | ½ | C-9B1-88 | BTS-150K | Horiz. AFC Disc. Diode Load - See Note 3 |
| R81 | 150KΩ | ½ | C-9B1-88 | BTS-150K | Horiz. AFC Disc. Diode Load - See Note 3 |
| R82 | 1.5Meg 5% | ½ | | BTS-1.5Meg-5% | Horiz. AFC Disc. Diode Load |
| R83 | 2.2Meg 5% | ½ | | BTS-2.2Meg-5% | Horiz. AFC Disc. Diode Load |
| R84 | 68KΩ | ½ | C-9B1-84 | BTS-68K | Horiz. Peaking |
| R85 | 1500Ω | ½ | C-9B1-64 | BTS-1500 | Horiz. MV Cathode |
| R86 | 100KΩ | ½ | C-9B1-86 | BTS-100K | Horiz. MV Grid |
| R87 | 5600Ω | ½ | C-9B2-71 | BTS-5600 | Horiz. MV Plate |
| R88 | 240KΩ 5% | ½ | C-9B1-54 | | Horiz. MV Plate -See Note 4 |
| R89 | 220Ω | ½ | | | Parasitic Supp |
| R90 | 470KΩ | ½ | C-9B1-94 | BTS-470K | Horiz. Output Grid |
| R91 | 4700Ω | 2 | C-9B4-70 | BTB-4700 | Horiz. Output Screen - See Note 8 |
| R92 | 470KΩ | ½ | C-9B1-94 | BTS-470K | Horiz. Feedback - See Note 12 |
| R93 | 240KΩ 5% | ½ | | | Horiz. Feedback - See Note 4 and 13 |
| R94 | 10Ω | ½ | C-9B1-38 | BW-1-10 | Centering Network |
| R95 | 1200Ω | 10 | C-9C12-1104 | 1 3/4A-2500 | Filter - Wire Wound - See Note 11 |
| R96 | 470KΩ | ½ | C-9B1-94 | BTS-470K | Isolation |
| R97 | 47KΩ | ½ | C-9B1-82 | BTS-47K | Differentiator - See Note 5. |
| R98 | 2.2Meg | ½ | C-9B1-102 | BTS-2.2Meg | Voltage Divider - See Note 5 |
| R99 | 1500Ω | ½ | C-9B1-64 | BTS-1500 | Horiz. Discharge - See Note 5 |
| R100 | 5600Ω | ½ | C-9B1-71 | BTA-5600 | Voltage Divider - See Note 5 |
| R101 | 10KΩ | 2 | C-9B4-74 | BTB-10K | Voltage Divider - See Note 5 |
| R102 | 5600Ω | 2 | C-9B4-71 | BTB-5600 | Voltage Divider - See Note 5 |
| R103 | 2.2Ω | ½ | C-9C1-1007 | | RF Rectifier Filament - See Note 5 |
| R104 | 18KΩ | ½ | C-9B1-77 | BTS-18K | 5th Video IF Transformer Shunt - See Note 5 |

Note 1. Some models use 47KΩ resistor in this application.
Note 2. Some models use 470KΩ resistor in this application.
Note 3. Some models use parallel resistors in this application to obtain desired value.
Note 4. Some models use 220KΩ resistor in this application.
Note 5. Not used in all models.
Note 6. Some models use 4700Ω resistor in this application.
Note 7. Some models use 8200Ω resistor in this application.
Note 8. Some models use 6800Ω resistor in this application.
Note 9. Some models use 3300Ω 1 watt resistor in this application.
Note 10. Some models use 47KΩ or 22KΩ resistor in this application.
Note 11. Some models use 5600Ω resistor in this application.
Note 12. Some models use 680KΩ resistor in this application.
Note 13. Some models use 1Meg resistor in this application.
Note 14. Some models use 1000 1 watt resistor in this application.
Note 15. Some models use 22KΩ resistor in this application.

## TRANSFORMER (POWER)

| ITEM No. | RATING PRI. | SEC. 1 | SEC. 2 | SEC. 3 | TRUETONE PART No. | REPLACEMENT DATA STANCOR PART No. | MERIT PART No. | CHICAGO PART No. |
|---|---|---|---|---|---|---|---|---|
| T1 | 117VAC | 660VCT | 5VAC | 6.3VAC | C-12A-18839 | P8159 ① And | P3059 ① And | TP346 ① And |
| | ④ 3A | .250ADC | ⑤ 8A | ⑤ 8A | | P5014 ② | P2945 ② | F633 ② |
| | | | | 5V, C. T. | | | | |
| | | | | 6.3VAC | | | | |
| | | | | ④ 1.5A | | | | |

① Add series resistor to reduce place voltage.
② Mount beneath chassis.

## TRANSFORMER (SWEEP CIRCUITS)

| ITEM No. | RATING DC RESISTANCE PRI. | SEC. | REPLACEMENT DATA TRUETONE PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | NOTES |
|---|---|---|---|---|---|---|---|
| T2 | 180Ω | 100Ω | B-12M-18341-1 | A-8111 ③ | A-3000 ③ | TSO-1 ③ | Vert. Block Osc. Trans. |
| T3 | 650Ω | SEC. 1 | C-20I-18643 | | | | Horiz. Output Trans. |
| | tap ④ | 142I Tap | | | | | |
| | 49Ω | ④ 3Ω | | | | | |
| | | SEC. 2 | | | | | |
| | | 11Ω Tap | | | | | |
| | | ⑤ 5.5Ω | | | | | |
| | | SEC. 3 | | | | | |
| | | 0Ω | | | | | |
| T4 | 730Ω | 9Ω | B-12C19048 | A-8112 ③ | A-3038 | TSO-5 | Vert. Output Trans. |
| T5A | 14Ω | | B-13M18888 | DY-7 | MD-1 | | Horiz. Deflection Coil |
| B | 63Ω | | | | | | Vert. Deflection Coil. |

③ Drill one new mounting hole.

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING IMPEDANCE PRI. | DC RES. SEC. | REPLACEMENT DATA TRUETONE PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| T6 | 8KΩ | 3.2Ω | 451Ω | .8Ω | B12C-18743 | A-8114 ③ | A-2932 | CRO-13 ③ | ③ Drill one new hole. |

## SPEAKER

| ITEM No. | RATINGS FIELD | V.C. IMP. | REPLACEMENT DATA TRUETONE PART No. | JENSEN PART No. | QUAM PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|
| SP1A | PM | 3.2Ω | C-18A-18745 | ST-108 | 6A21 | |
| B | PM | 3.2Ω | C-18A-18885 * | Mod. P6-X | | *Used in Model 2D1045 |
| | CONE DIA. | V. C. DIA. | | | | |
| SP2A | 5 7/8" | 9/16" | | | | |
| B | 9 3/4" | 3/4" | | | | |

## FILTER CHOKE

| ITEM No. | RATINGS TOTAL DIRECT CURRENT | D. C. RESISTANCE | INDUCTANCE @ CURRENT 1000 m² | REPLACEMENT DATA TRUETONE PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| L1 | .240A | 35Ω | 1.4 Henries | B-16A-17959 | C-2326 | C-2974 | TR3300 ① | ① Drill one new |
| L2 | .240A | 35Ω | 1.4 Henries | B-16A-17959 | C-2326 ① | C-2974 | TR3300 ① | mounting hole. |

## COILS (RF-IF)

| ITEM No. | USE | DC RES. PRI. | SEC. | REPLACEMENT DATA TRUETONE PART No. | MESSNER PART No. | NOTES |
|---|---|---|---|---|---|---|
| L3 | Antenna Coil | 0Ω | 0Ω | B-20I-17143 | | High Band |
| L4 | Antenna Coil | .1Ω | .1Ω | | | Low Band(Part of L3) |
| L5 | RF Choke | .9Ω | | A-16A-17138 | | |
| L6 | RF Coil | | | | | |
| | Primary | .1Ω | | B-13E-17140 | | High Band |
| L7 | RF Coil | | | | | |
| | Secondary | .1Ω | | B-13E-17140 | | High Band |
| L8R | RF Coil | | | | | |
| | Primary | .1Ω | | B-13K-13046 | | Low Band |
| L9 | RF Coil | | | | | |
| | Secondary | .1Ω | | B-13E-13046 | | Low Band |
| L10 | Osc. Coil | .1Ω | | B-13E-17140 | | High Band |
| L11 | Osc. Coil | .1Ω | | B-13D-12155 | | Low Band |
| L12 | Conv. Plate | | | | | |
| | Trap | 1Ω | | A-16A-18025 | | |
| L13 | 1st Video IF | .3Ω | | A-13M-18073 | | |
| L14 | Fil. Choke | .3Ω | | A-20I-15609 | | |
| L15 | 2nd Video IF | .3Ω | | B-20I-15612 | | |
| L16 | 3rd Video IF | .3Ω | | B-20I-15612 | | |
| L17 | 4th Video IF | .3Ω | | B-20I-15612 | | |
| L18 | Grid Choke | 2.3Ω | | A-20I-15608 | | |
| L19 | 5th Video IF | .9Ω | .9Ω | B-13B-18784 | | |
| L20 | Fil. Choke | 1.2Ω | | A-16A-17937 | | |
| L21 | Peaking | 1Ω | | A-16A-17961 | | |
| L22A | 4.5MC Trap | 1.7Ω | | A-20I-18746 | | Includes C50 |
| B | 4.5MC Trap | | | A-20I-19363 | | Alternate |
| L23 | Peaking | 22Ω | | A-16A-19365 | 19-1923 | 410 Microhenries |
| L24A | Peaking | 9Ω | | A-16A-18685 | | |
| B | Peaking | | | A-16A-19486 | 19-1922 | 240 Microhenries Alternate |
| C | Peaking | | | A-16A-19366 | | Alternate |
| L25A | Peaking | 9Ω | | A-16A-18685 | | |
| B | Peaking | | | C-8G-13892 | 19-1923 | 380 Microhenries Alternate |
| C | Peaking | | | A-16A-19367 | | Alternate |
| L26 | Peaking | | | A-16A-17190 | | |
| L27 | Sound IF | 3.1Ω | | B-13A-18783 | | |
| L28A | Ratio Det. | | | | | |
| | Trans. | 4.3Ω | .3Ω | B-13M-17273 | | |
| B | Ratio Det. | | | | | |
| | Trans. | | | B-13M-19257 | | Alternate |
| L29 | Horiz. Freq. | 80Ω | | A-13D-16943 | | |
| L30A | Horiz. Lin. | 2Ω | 4Ω | A-13M-19320 | | |
| B | Horiz. Lin. | | | A-13M-18962 | | Alternate |
| C | Horiz. Lin. | | | A-13M-18961 | | Alternate |
| L31 | Horiz. Size | .2Ω | | A-13M-18233 | | |

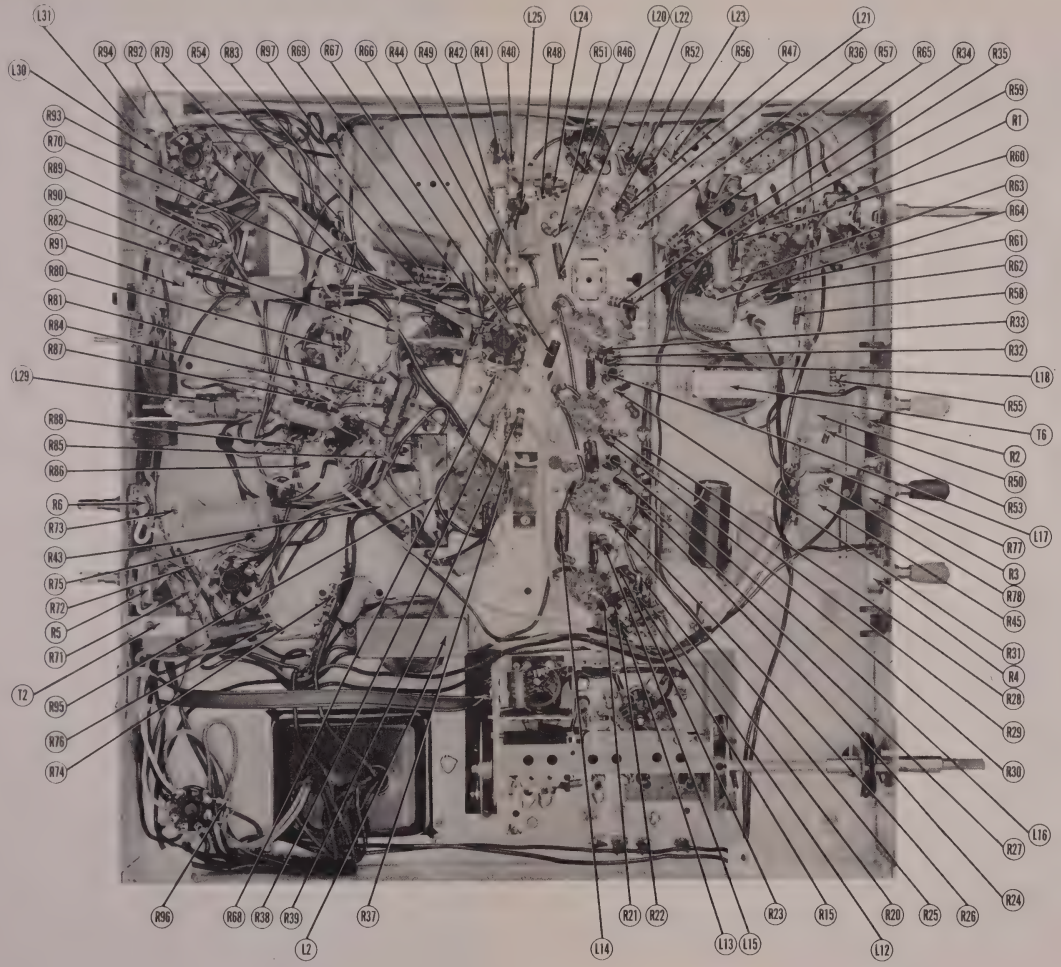
# PARTS LIST AND DESCRIPTIONS (Continued)

## FUSES

| ITEM No. | TYPE | RATING | REPLACEMENT DATA | | | | REMARKS |
|---|---|---|---|---|---|---|---|
| | | | TRUETONE PART No. | | LITTELFUSE PART No. | | |
| | | | FUSE | HOLDER | FUSE | HOLDER | |
| M2 | 3AG | .250A | A-46B-18362 | A-55F-18024 | 312.250 | | |

## MISCELLANEOUS

| ITEM No. | PART NAME | TRUETONE PART No. | NOTES |
|---|---|---|---|
| M1 | RF Tuner | | |
| M3 | Switch | A-20F-12108 | Phono-On-Off |
| M4 | Focus Magnet | B-55P-19815 | |
| M5 | Ion Trap | B-16M-18623 | |
| | Safety Glass | B-30M-18773 | |
| | Escutcheon | B-2M-18768 | Channel Selector |
| | Escutcheon | B-2M-17068 | Contrast |
| | Pointer | A-2G-18788 | |
| | Knob | B-5B-18781-76 | Tuner |
| | Knob | B-5B-17761-76 | Volume |
| | Knob | B-5B-17762-76 | Contrast |
| | Knob | A-25M-18172 | Rubber (White) |
| | Knob | A-25M-18177 | Rubber (Red) |
| | Knob | A-25M-18178 | Rubber (Blue) |




CHASSIS BOTTOM VIEW-RESISTOR AND INDUCTOR IDENTIFICATION

WESTINGHOUSE MODELS
H-336T5U, H-337T5U (Ch. V-2157U)

WESTINGHOUSE MODELS
H-336T5U, H-337T5U (Ch. V-2157U)

WESTINGHOUSE MODEL H-336T5U

| | |
|---|---|
| TRADE NAME | Westinghouse, Models H-336T5U, H-337T5U (ch. V-2157U) |
| MANUFACTURER | Westinghouse Electric Corp., Receiver Div., Sunbury, Pa. |
| TYPE SET | AC-DC Operated Superheterodyne Receiver with Loop Antenna |
| TUBES (FIVE) | Types 12BE6 Converter, 12BA6 IF Amp., 12SQ7 or 12AV6 or 12AT6 or 14B6 Det.-AVC-AF, 50C5 Power Output, 35W4 Rectifier |
| POWER SUPPLY | 105-120 Volts AC-DC |
| RATING | .22 Amp. @ 117 Volts AC |
| TUNING RANGE—BROADCAST | 540-1615KC |

ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not connect a .1MFD capacitor in series with low side of signal generator and B-.
To set pointer, turn tuning cap fully closed and set pointer to last reference mark at low frequency end of dial.
Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | RADIO DIAL SETTING | OUTPUT METER | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|
| 1. | .1MFD | High side to stator on rear section of tuning gang. Low side to B-. | 455KC (400~ Mod) | Tuning gang Fully open. | Across voice coil. | A1, A2. A3, A4 | Adjust for maximum output. If isolation transformer is not used, reduce dummy antenna to .001MFD to reduce hum modulation. |
| 2. | " | " | 1615KC | " | " | A5 | " |
| 3. | | Loop | 1400KC | Tune for max. output. | " | A6 | Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output |

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# PARTS LIST AND DESCRIPTIONS

## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA: Westinghouse PART No. | REPLACEMENT DATA: STANDARD REPLACEMENT | RMA BASE TYPE | INSTALLATION NOTES |
|---|---|---|---|---|---|
| V1 | Converter | 12BE6 | 12BE6 | 7CH | |
| V2 | IF Amplifier | 12BA6 | 12BA6 | 7BK | |
| V3A | Det.-AVC-AF | 12SQ7 | 12SQ7 | 8Q | |
| B | Det.-AVC-AF | 12AV6 | 12AV6 | 7BT | |
| C | Det.-AVC-AF | 12AT6 | 12AT6 | 7BT | |
| D | Det.-AVC-AF | 14B6 | 14B6 | 8W | |
| V4 | Power output | 50C5 | 50C5 | 7CV | |
| V5 | Rectifier | 35W4 | 35W4 | 5BQ | |

## CAPACITORS

**Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.**

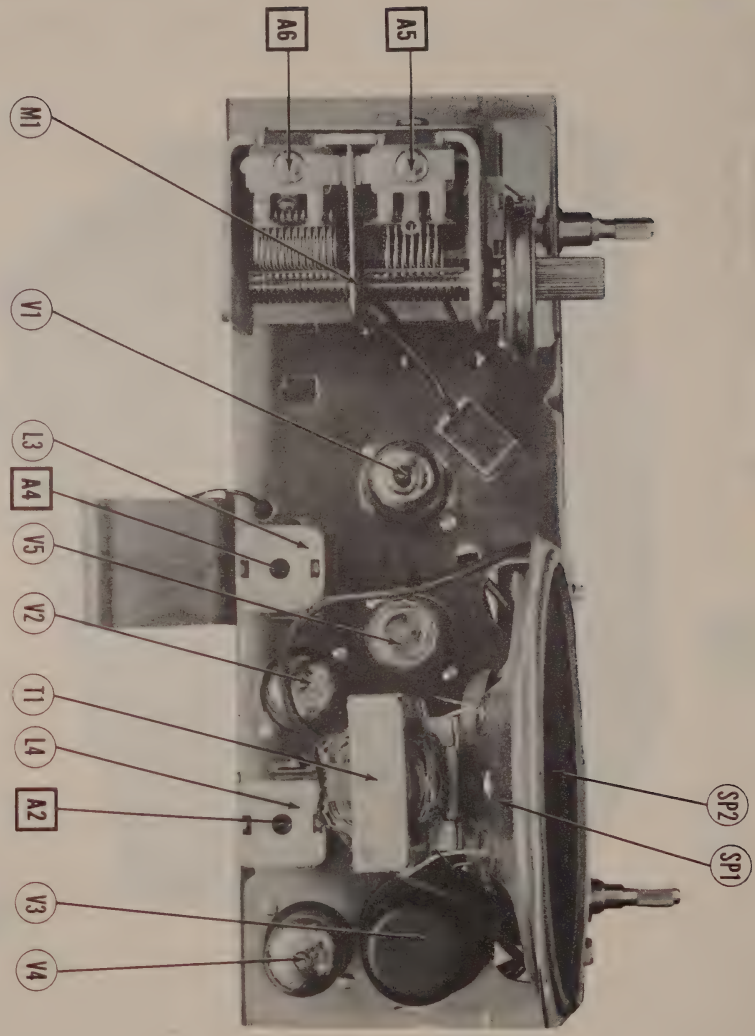
| ITEM No. | RATING: CAP. | RATING: VOLT | REPLACEMENT DATA: WESTINGHOUSE PART No. | AEROVOX PART No. | CENTRALAB PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES AND INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| C1A | 50 | 150 | V-9991 | PRS150/50-50 | | EDL5515 | | TVA-2453 | Filter Red |
| B | 50 | 150 | | | | | | | Filter Orange |
| C2 | .05 | 200 | RCP10W2503M | P288-05 | DF-503 | PTE4S5 | | 2TM-S5 | AVC Filter |
| C3 | .1 | 400 | RCP10W4104M | P488-1 | DF-104 | PTE4P1 | | 4TM-P1 | Line Isolation |
| C4A | 220 | | V-9634-1 | S1220 | D6-221 | 5W5T25 | GP2K-220 | | Diode RF Filter |
| B | 2000 | | | BPD-002 | DD-202 | PTE6D2 | 801-002 | | Audio Coupling |
| C | 220 | | | S1220 | D6-221 | 5W5T25 | GP2K-220 | 34C3 | AF Amp. Plate |
| D | 5000 | | | BPD-005 | DD-502 | PTE6D5 | 811-005 | | Audio Coupling |
| C5 | .01 | 400 | RCP10W4103M | P488-01 | D6-103 | PTE4S1 | 821-01 | 4TM-S1 | Output Plate |
| C6 | .05 | 400 | RCP10W4503M | P488-05 | DF-503 | PTE4S5 | | 4TM-S5 | Line Filter |

## CONTROLS

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: Westinghouse PART No. | IRC PART No. | CLAROSTAT PART No. | CENTRALAB PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| R1A | 500KΩ | ½ | V-9993-1 | Q13-133 | AG-60-Z | BSK-60-S | Volume Control |
| B | Shaft | | Not Req | Not Req | KSS-3 | Not Req | Attach to R1A per instructions |
| C | Switch | | Not Req | 76-1 | SWB | Not Req | Attach to R1A per instructions |

## RESISTORS

| ITEM No. | RATING: RESISTANCE | RATING: WATTS | REPLACEMENT DATA: WESTINGHOUSE PART No. | IRC PART No. | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| R2 | 22KΩ | ½ | RC20AE223M | | Osc. Grid |
| R3 | 3.3Meg | ½ | RC20AE335M | BTS-3.3Meg | AVC Network |
| R4 | 68Ω | ½ | RC20AE680M | | IF Amp. Cathode |
| R5 | 10Meg | ½ | RC20AE106M | BTS-10Meg | AF Amp. Grid |
| R6 | 330KΩ | ½ | RC20AE334M | BTS-330K | AF Amp. Plate |
| R7 | 470KΩ | ½ | RC20AE474M | BTS-470K | Output Grid |
| R8 | 120Ω | ½ | RC20AE121M | BTS-120 | Output Cathode |
| R9 | 1000Ω | 1 | RC30AE102M | BTA-1000 | Filter |



# PARTS LIST AND DESCRIPTIONS (Continued)

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | RATING | | | | REPLACEMENT DATA | | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| | IMPEDANCE | | DC RES. | | Westinghouse PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | |
| | PRI. | SEC. | PRI. | SEC. | | | | | |
| T1 | 2KΩ | 3Ω | 160Ω | .5Ω | Part of SP1 | A-3332 ① | A-3025 ① | R0-2 ① | ① Bend mounting tabs down file out slots and mount on original bracket. |

## SPEAKER

| ITEM No. | RATINGS | | REPLACEMENT DATA | | | INSTALLATION NOTES |
|---|---|---|---|---|---|---|
| | | | WESTINGHOUSE PART No. | JENSEN PART No. | QUAM PART No. | |
| | FIELD | V. C. IMP. | | | | |
| SP1 | PM | 3Ω | V-9727-1 ③ | P4-X ② Model ST113 | 4A07 ② | ② Remount output transformer ③ Includes T1 |
| | CONE DIA. | V. C. DIA. | | | | |
| SP2 | 4" | 9/16" | | | | |

## R F COILS

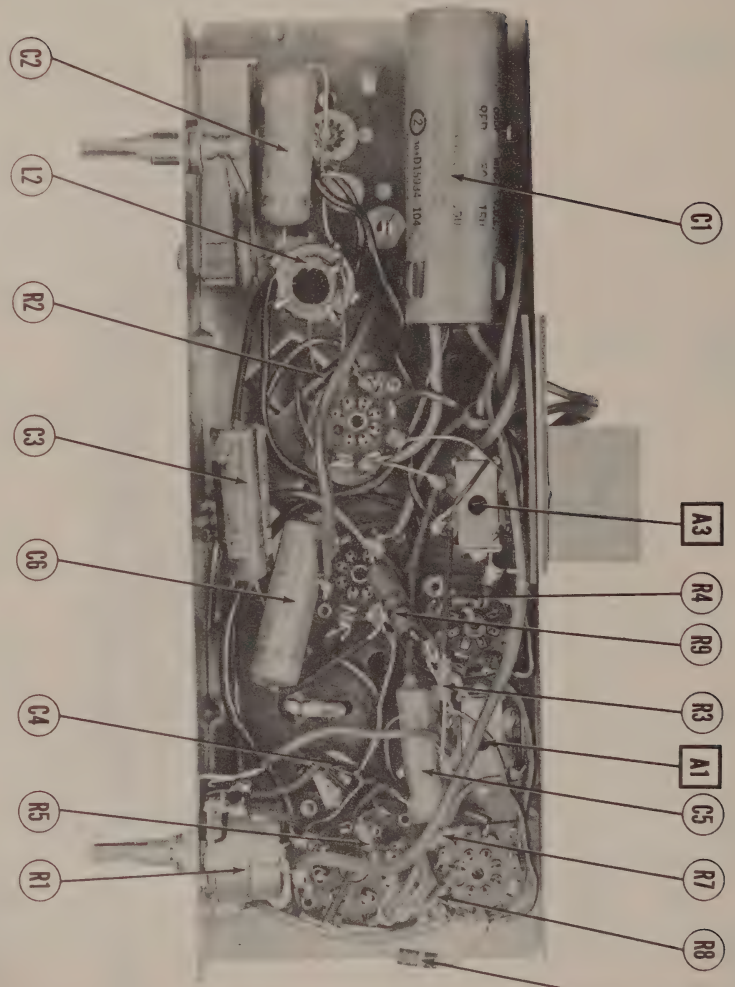
| ITEM No. | USE | DC RES. | | REPLACEMENT DATA | |
|---|---|---|---|---|---|
| | | PRI. | SEC. | WESTINGHOUSE PART No. | MEISSNER PART No. |
| L1 | Loop Ant. | 3.2Ω | | V-9994 | |
| L2 | Osc. Coil | 1Ω | 12Ω | V-9992 | 14-1073 |
| L3 | 1st IF | 20Ω | 20Ω | V-9735-1 | 16-6758 |
| L4 | 2nd IF | 20Ω | 20Ω | V-9735-1 | 16-6758 |

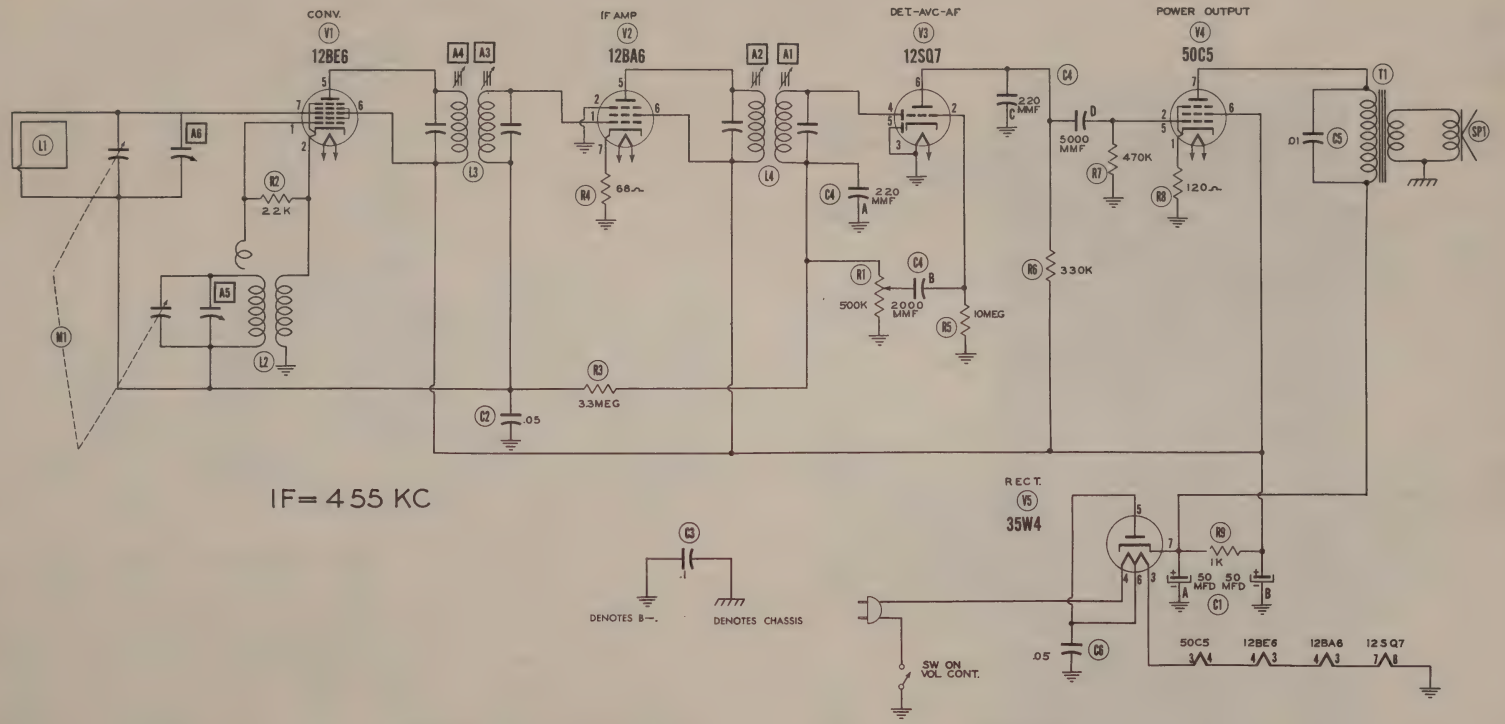
## MISCELLANEOUS

| ITEM No. | PART NAME | WESTINGHOUSE PART No. | NOTES |
|---|---|---|---|
| M1 | 2 Gang Var. Cap. | V-10047 | (25-404MMF, 17-149MMF) |
| | Cabinet | V-1219-2 | Model H-336T5U |
| | Cabinet | V-1219-4 | Model H-337T5U |
| | Dial | V-10008-3 | Model H-336T5U |
| | Dial | V-10008-4 | Model H-337T5U |
| | Knob | V-10009-6 | Model H-336T5U |
| | Knob | V-10009-7 | Model H-337T5U |

TUNING GANG FULLY CLOSED

## CHASSIS—BOTTOM VIEW






IF= 455 KC

VOLTAGE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 |
|---|---|---|---|---|---|---|---|---|---|
| V 1 | 12BE6 | §-4.3VDC | 0V | 12VAC | 25VAC | 80VDC | 80VDC | -.1VDC | |
| V 2 | 12BA6 | -.1VDC | 0V | 25VAC | 37VAC | 80VDC | 80VDC | .8VDC | |
| V 3 | 12SQ7 | 0V | -.4VDC | 0V | -.2VDC | 0V | 48VDC | 12VAC | 0V |
| V 4 | 50C5 | 4.8VDC | 0V | 85VAC | 87VAC | 0V | 80VDC | 95VDC | |
| V 5 | 35W4 | 0V | 0V | 85VAC | 117VAC | 110VAC | 110VAC | 100VDC | |

§ TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 |
|---|---|---|---|---|---|---|---|---|---|
| V 1 | 12BE6 | 22KΩ | 1Ω | 12Ω | 25Ω | †1KΩ | †1KΩ | 3.8Meg | |
| V 2 | 12BA6 | 3.8Meg | 0Ω | 25Ω | 38Ω | †1KΩ | †1KΩ | 68Ω | |
| V 3 | 12SQ7 | Inf. | 10Meg | 0Ω | 500KΩ | 0Ω | †330KΩ | 12Ω | 0Ω |
| V 4 | 50C5 | 120Ω | 470KΩ | 90Ω | 38Ω | 470KΩ | †1KΩ | †160Ω | |
| V 5 | 35W4 | 0Ω | 0Ω | 90Ω | 130Ω | 120Ω | 120Ω | 70KΩ | |

† MEASURED FROM PIN 7 OF V5

THE COOPERATION OF THE MANUFACTURER OF THIS
RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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134-12

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

WESTINGHOUSE
MODEL V6235

Figure 1

WESTINGHOUSE
MODEL V6235

## GENERAL INFORMATION

This Westinghouse Model V-6235 Record Changer is designed to play either standard 78 RPM records or 33-1/3 RPM long-playing records. This changer will play automatically as many as twelve 10-inch records or ten 12-inch records in one loading. However, all records loaded together must be of the same size and rated to operate at the same speed.

This changer is a two-knob controlled mechanism. One knob is for "Off-Manual Automatic and Reject," while the other knob is for selecting the proper speed - 33-1/3 RPM or 78 RPM. Any record may be rejected while playing by turning the control knob to "Reject" momentarily. The last record will be repeated until the changer is turned off.

Manufactured by:

Westinghouse Electric Corporation
Home Radio Division
Sunbury, Pennsylvania

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## MANUAL OPERATION

Manual playing of 33-1/3 RPM records is not recommended, due to the delicate nature of the grooves in these records. Single records of this type can best be played automatically as described in "Automatic Operation." However, 78 RPM, odd-size or warped records can safely be played in the following manner:

1. Raise the hold-down (2) to its upright position.

2. Place the record on the turntable.

3. Turn the needle control knob (15) to "Std." position.

4. Turn speed control knob (27) to "Std." position.

5. Rotate the function control knob (29) to "Man." position, and gently move the pickup arm into playing position.

6. After the record has been played, turn the knob (29) to the "Off" position and gently move the pickup arm to the rest (23).

## AUTOMATIC OPERATION

(A) To play 33-1/3 RPM records, the needle control knob (15) should be turned to the left to "Slow" position, and the speed control knob (27) to "Slow." To play 78 RPM records, these knobs (15) and (27) should be rotated to "Std." position.

To Load -

1. Raise the hold-down (2) to its upright position.

2. Adjust the ejector (7) for the size of record to be played. For ten-inch records, the ejector must be latched in the extended position; for twelve-inch records, the ejector must be latched in the retracted position. To adjust, raise the ejector slightly and move it to the desired position.

3. Rotate knobs (15) and (27) to proper position, as described under "Automatic Operation (A)."

4. Place a stack of records on the spindle, and lower the hold-down (2) to rest on the top record.

5. Turn knob (29) to "Rej." and release. The changer will now automatically play the entire stack of records and will continue playing the last record until the changer is turned off.

6. To stop the changer, turn the control knob (29) to the "Off" position and place the pickup arm on the rest (23).

CAUTION: Do not stop the changer during the change cycle. Allow the changer to go through a complete change cycle, returning the needle to the record; then turn changer off.

## THE CHANGE CYCLE

The change cycle may be started by one of two actions:

1. Turning the control knob to "Rej." causes the control cam (76) to actuate the control link (78) and allows the trip link (60) to be pushed away from the follower (83). The follower then tilts and engages the worm (54).

2. As the pickup arm moves into the eccentric groove of the record, the movement of the pickup (8) causes the ratchet (64) to pivot the trip rod (56). As the trip rod pivots, the trip link (60) is also turned, by action of spring (58), releasing the follower (83). The follower, which transmits power for the change cycle, then engages the worm (54) and moves downward. The trip crank and lift rod assembly (74) is now pushed upward through the action of the follower arm (82). The long arm of the trip crank rides up the inclined portion of the index (70), raising the pickup and swinging it out clear of the records. As the follower (83) continues to move downward, the follower arm (82) is pivoted against the adjusting screw (55) of the ejector arm (44), actuating the trigger assembly (36), which, in turn, moves the ejector slide (7) and drops a record to the turntable.

At this point, the follower (54), guided by the follower guide (53), moves up the worm. As the follower arm (82) moves away from the adjusting screw (55) of the ejector arm (44), the ejector slide (7) returns to its rest position. Also, through the action of the follower arm (82), the trip crank and lift rod assembly (74) rides off the inclined portion and down the face of the index (70), positioning the pickup and lowering it to the record. The follower now moves off the worm and is latched by the trip link (60).

## ADJUSTMENTS

Set-Down Point -

To adjust the set-down point, cycle the changer and stop the turntable just before the needle comes down on the record. Loosen the lock nut (69) and adjust the index screw (68). Turning the screw clockwise will move the pickup toward the center; counterclockwise, the pickup will move away from the record. Adjust the pickup so the needle rests 1/8" in from the edge of the record.

The set-down adjustment may be made with either 10-inch or 12-inch records and should be correct for both. If the set-down has been disturbed by holding the pickup arm during the cycle, or if the pickup crank (62) is loose, the following approximate adjustment should be made before adjusting the index screw in the baseplate. With the crank in this position, move the pickup arm to about 1/4" from the spindle and tighten the set screw.

Pickup Arm Height -

To adjust the height of the pickup arm, loosen the locknut on screw (18) and turn this screw until the correct adjustment is obtained. To get to this screw, raise the pickup to a vertical position; adjust so the pickup arm clears the unplayed stack of records about 1/8" at its highest point during the change cycle.

Timing of Record Drop -

The timing of the record drop is adjusted by the screw (55) on the end of the ejector arm (44).

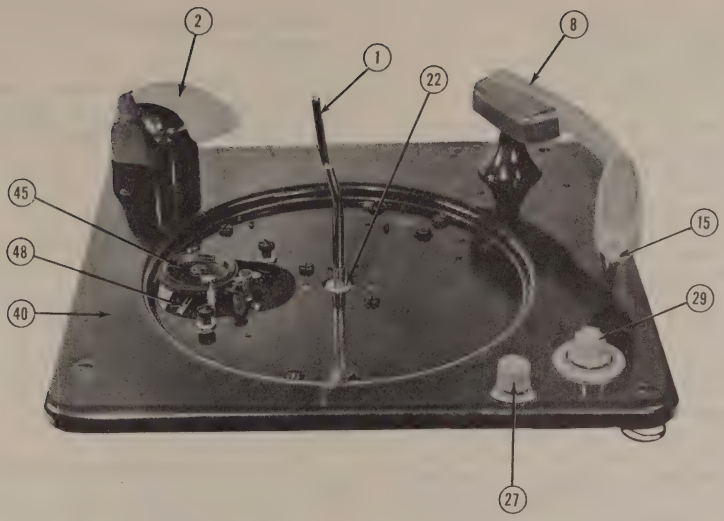



Figure 2

The adjustment should be such as to release the bottom record of a stack of ten 12-inch records in cycle.

Ejector Slide Adjustment -

The ejector slide is adjusted by the screw (41). The adjustment should be such that the tabs are normally about 1/32" from the edge of a record.

## LUBRICATION

Additional lubrication should not be required for the life of the changer, but in cases of unusual use, or high-operating temperature, the changer should be lubricated as follows:

Apply Lubriplate to:

1. Worm threads (34).
2. Lift rod (74).
3. Contact point between pickup crank (62) and trip crank (74).
4. Follower arm (82):
   (a) At pivot of fulcrum (59).
   (b) At contact point of trip crank (74).
   (c) At contact point of sub-frame (52).
5. Ejector arm (44):
   (a) At contact point with trigger (36).
   (b) At contact point of follower arm (82) and screw head (55).
6. Index (70) on surfaces of slide for trip crank arm (74).
7. Follower guide (53) where follower (83) bears.

Apply a Small Quantity of Light Oil to:

1. Between turntable shaft (22) and spindle (1).
2. Follower (83) at pivot with follower arm (82).
3. Ejector arm (44) at pivot with ejector fulcrum.
4. Index (70) at bearing with slide bracket (66).

## SERVICE INFORMATION

Turntable Does not Revolve When Control Knob Is Turned to "On" Position -

1. Machine stalled in Cycle:
   Turn the turntable carefully, by hand, until it starts rotating under its own power.
2. No Current at motor.
3. Motor Defective:
   Remove the turntable to allow the motor to operate without load. If current is reaching the motor and the drive shaft does not rotate, the motor is defective.
4. Motor idler wheel not engaging turntable rim:
   (a) Check the motor idler assembly to see that it slides freely.
   (b) Wipe off the inside rim of the turntable to remove flock: or, if oily, clean the turntable rim and the rubber tire of the idler wheel with carbon tetrachloride.
5. Turntable bearing tight:

   Hold idler wheel away from turntable or remove idler wheel and rotate turntable, by hand, to see that it is free. If binding occurs, remove the turntable and lubricate the oilite turntable shaft bearing with light oil.

Changer Does not Cycle When Control Knob Is Turned to "Rej." Position -

1. Manual reject not actuating trip:

Turn the control knob to "Rej." position, hold, and see if the hook on the end of the trip link (60) is pulled back sufficiently to allow the worm follower (82) to drop and engage in the worm threads (54):

(a) If the trip link does not release the follower, check the control link rod (78). If the rod is bent, carefully straighten it and check for trip again.

(b) If the trip link is not restricting the follower, but the follower still does not engage in the worm, the follower must be removed from the follower arm (82), and dirt, or other foreign matter, cleaned from the pivot point and from between the line of contact where the two parts meet. Excessive grease may cause this binding.

To Remove the Follower -

1. Be sure the changer is not in cycle.

2. Remove the turntable.

3. Remove the two screws from base plate and sub-frame (52).

4. Carefully work the sub-frame assembly out of the base plate and revolve the assembly counter-clockwise to work off the follower and follower arm.

5. Remove the follower.

If the Follower Drops but Does not Engage in the Worm -

1. Check for excessive wear in the pivot of the follower and follower arm.

2. Check to see if the spring (8) has become unhooked.

3. Check for dirt in the follower arm pivot.

4. Turntable not engaging turntable lock.

5. Turntable lock loose on turntable shaft.

Record Does not Drop When Changer Cycles -

1. Check for bent spindle (1).

2. Check for under or oversize record, or enlarged center hole.

3. Check position of ejector slide (7), as given under "Adjustments."

4. Check the screw in the ejector arm (44) to see if it hits the follower arm (82) when the follower is at the bottom of the worm. If the lock nut on this screw has worked loose, reset the screw, as given under "Adjustments."

5. Check to see if the ejector slide (7) is properly seated with its pushing mechanism on the trigger (36).

6. Check for a defective trigger by slowly pulling the ejector arm (44) down by hand. If a record does not drop, the trigger (36) must be repaired or replaced.

To Remove the Trigger -

1. Unhook the index spring (42) from the ejector link (35).

2. Remove the four screws from the base plate and the housing assembly.

3. Lift the trigger from the housing and check for broken weld on strengthening brace.

Two Records Drop at Once -

1. Hole in record too large or records too thin.

2. Slide in spindle not fully down:

(a) Check slide to be sure it is free and does not bind at any point. Clean out foreign matter or straighten, if necessary.

Do not oil.

(b) When records are placed on spindle, be sure the slide is all the way down.

3. Check for position of ejector slide (7).

Record Hits Pickup Arm -

1. Check timing of changer cycle, as given under "Adjustments."

2. Check for a creeping index (70). Index "creeps" if it moves when the changer goes through cycle. To correct this condition:

(a) Be sure that the pickup (8) and the pickup crank (62) are aligned, as given under "Adjustments."

(b) Place the ejector slide (7) in 12-inch position, cycle the changer until the follower is at the bottom of the worm. The index spring (42) should be just barely slack. The ejector link (35) may be bent forward or back to give the index spring this required slack.

3. Check for too much gap between the follower arm (82) and the trip crank (74). This gap should be about .005" to .016".

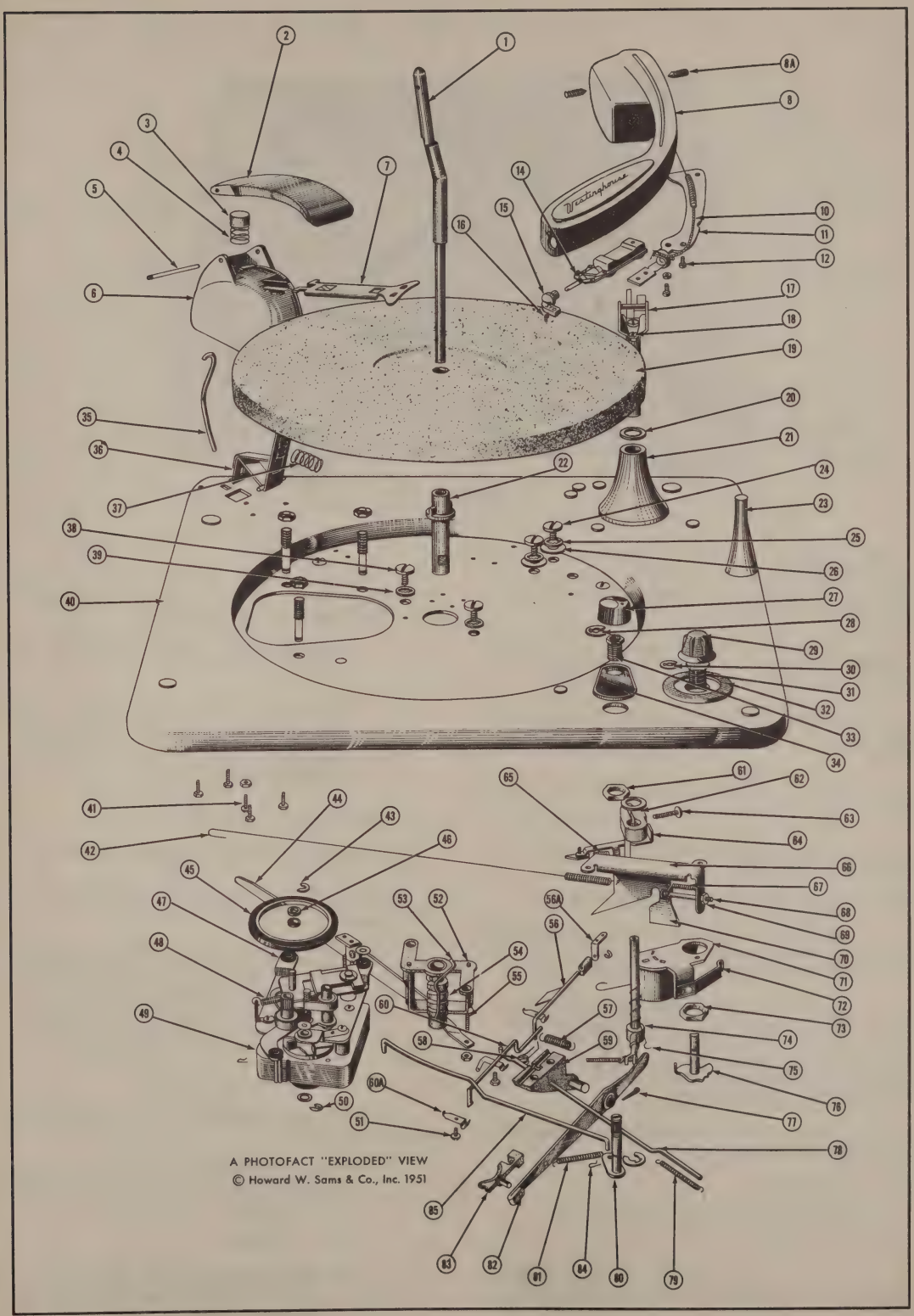
To reduce the gap, do one of the following:

(a) Bend the follower arm up.

(b) Replace the follower arm.

Needle Does not Set on Either 10" or 12" Records -

1. Check the needle for 10" position by hold-


Westinghouse
A PHOTOFACT "EXPLODED" VIEW
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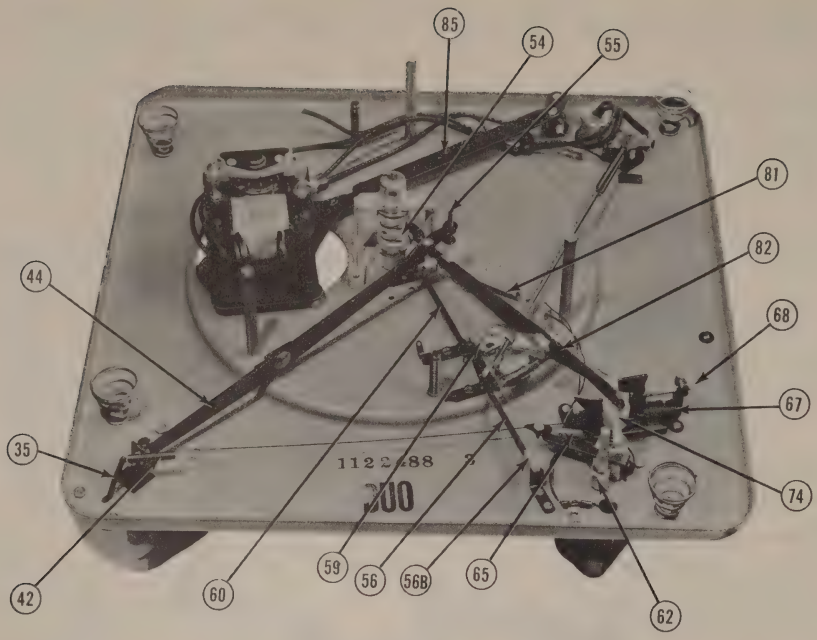



Figure 3

ing the index (70) in with the fingers as far as it will go and cycle the changer.

2. Check the needle set-down for 12" position by holding the index out with the fingers as far as it will go and cycle the changer.

3. If these positions are correct, when the index is held in either position, check for "Creeping index."

4. Check for bind between guide tabs on the index and the index screw (68).

5. Check for bind between the index and the index slide bracket (66).

Needle Does not Track Across Record Properly -

1. Check for gap between follower arm and trip crank. This gap should be about .005" to .016". To increase the gap, bend the follower arm down.

2. Check for lack of vertical play of the pickup shaft in the pickup post (21). There should be .003" to .010" play here. To correct, loosen the screw (63) in the pickup crank (62), place a shim between the pickup hinge washer and the pickup post and then reset the pickup and pickup crank.

3. Check for lack of lubrication between the pickup shaft and the pickup post.

Center Trip Defective -

1. Check to be sure the control knob is in "automatic" position.

2. If the changer does not trip, push the trip rod (56) back, by hand, and see if the hook on the trip link (60) is pulled back sufficiently to release the worm follower. If the trip link does not release the follower, check for the following:

(a) Bind between trip link bracket (60A) and link.

(b) If the above doesn't show trouble, bend the tail of the trip link (60) in toward the side of the fulcrum. This will allow the hook on the other end of the trip link to pull back farther.

(c) Spring (57) weak or unhooked.

(d) Ratchet pawl not engaging ratchet properly.

3. If the changer continues to trip, check for the following:

(a) Too much clearance between the hook on the trip link and the follower; correct by bending the tail on the trip link away from the side of the fulcrum. This will cause the hook end of the trip link to engage the follower more closely.

(b) Trip spring weak or loose.

4. If the needle jumps out of the eccentric groove on records:

(a) Check trip pressure. This should not exceed 12 grams. If trip pressure is too high, check:

1. For binding.

2. Spring (57) too strong. May be weakened by carefully stretching one of the center loops.

(a) Record may be defective. The trip grooves are often too shallow. Check with a record known to be good.

(b) Needle point may be worn, or broken off.

(c) Check phono leads at rear of tone arm to insure sufficient slack.

Turntable Speed too Slow -

1. Binding in turntable bearing.

2. Motor pulley too small in diameter. Replace with motor pulley of correct diameter.

3. Line voltage too low. Voltage in a 115-volt changer should not be less than 100 volts.

4. Operating temperature too low. Surrounding temperature should not be less than 60° F.

Turntable Speed too Fast -

1. Motor pulley too large in diameter. Replace with motor pulley of correct diameter.

Turntable Stalls in Cycle -

1. Motor idler (45) not engaging turntable with sufficient tension.

2. Turntable bearing tight.

3. Operating temperature too low.

4. Line voltage too low.

5. Binding between follower and worm:

(a) Check lubrication of follower arm at point of bearing with sub-frame.

(b) Check lubrication or worm threads.

(c) File some metal from the follower arm at the point of bearing with the sub-frame to allow more clearance between the worm and the follower.

1. Remove the follower, as described in the second paragraph.

2. Remove spring (81).

3. Remove cotter pin (77).

4. Remove follower arm.

Trip Crank (74) Jams on Index (70) -

(a) Check for lubrication on index at point of bearing with trip crank.

(b) Check for burrs on the inclined surface of the index. Surface must be very smooth. Polish with crocus cloth.

(c) Check for grooves worn into trip crank arm at contact point with index. File smooth with fine file, if necessary.

Noise During Playing of Record -

1. Rumble:

(a) From motor: If a low-pitched rumbling sound comes from the loud speaker while a record is being played, check the motor grommets to be sure the motor is setting freely on them. The motor lead wires should have enough slack to allow the motor to float. Motor rumble may also come from an out-of-balance motor rotor. In this case, the motor should be replaced.

(b) From bearings: Defective turntable bearings can cause rumble. Check for foreign matter. Lubricate with lubriplate or light oil.

2. Defective Motor Idler Wheel:

A rapid thumping sound while the motor is running may indicate a flat spot on the motor idler wheel. Remove the turntable and check the rubber tire on the idler. If the surface of the rubber tire is not smooth and even, replace the idler.

3. Defective Needle:

A bad needle will cause loud needle scratch or hiss through both the speaker and the air directly from the needle.

4. Turntable Scrapes:

If a scraping sound occurs as the turntable revolves, check:

(a) Turntable wraped, causing outer rim to rise and fall.

(b) Motor idler bent.

(c) Motor adjusted too high.

5. Squeaks:

Squeaking sound, as changer operates, indicates lack of lubrication. Lubricate points indicated under "Lubrication."

Excessive Record Wear -

1. Binding in pickup arm

2. Defective needle.

3. Excessive needle pressure.

Turntable Will not Rotate at 33-1/3 RPM -

1. Speed control lever (85) not being actuated by the control arm (80).

2. Pulley (45) not engaging the small diameter of the motor shaft:

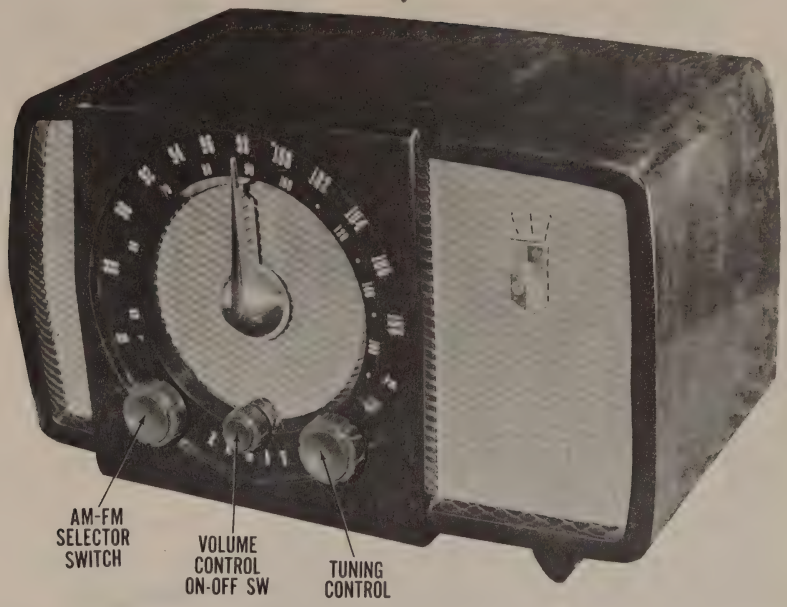
(a) Place extra washers (46) under the pulley to raise it high enough to engage the small diameter.

3. Spring (48) loose, thereby not pulling the pulley (45) in contact with the motor shaft.

## PARTS LIST

| Ref. No. | Part No. | Description |
|---|---|---|
| 1 | V-8136 | Spindle Assembly - Consists of |
| | | Guide |
| | | Guide Spring |
| | | Pin |
| 2 | V-7241 | Hold-Down Clamp |
| 3 | V-7306 | Hold-Down Cup |
| 4 | V-7305 | Spring Hold-Down |
| 5 | V-7070 | Hinge Pin |
| 6 | V-7243 | Record Support Housing |
| 7 | V-7242 | Ejector Slide |
| 8 | V-8119 | Pickup Arm Assembly - Consists of: |
| | | Pickup Arm (8) |
| | | Cartridge (14) |
| | | Cartridge Mounting Screw (13) |
| | | Knob (15) |
| | | Strengthener and Pivot Assembly (11) |
| | | Chain and Spring Assembly (9 and 10) |
| | | Cable and Clip Assembly |
| | | Screw, Cartridge Knob (16) |
| | | Screw, Strengthener |
| | | Screw, Hinge Pin (8A) |
| 8 | V-8120 | Pick Arm (only) |
| 8A | V-7979 | Pickup Pivot Screw |
| 10 | V-7989 | Chain and Spring Assembly |
| 11 | V-7983 | Strengthener and Pivot Assembly |
| 12 | V-7082 | Strengthener Mounting Screw |
| 13 | V-7987 | Cartridge Mounting Screw |
| 14 | V-7984 | Cartridge |
| 15 | V-7988 | Cartridge Control Knob |
| 16 | V-7990 | Screw-Control Knob |
| 17 | V-8134 | Hinge and Shaft Assembly (Including Hinge Pin and Bracket) |
| 18 | V-7301 | Height Adjustment Screw #5-40 x 1/2 |
| 19 | V-8118 | Turntable |
| 20 | V-7300 | Fiber Washer |
| 21 | V-7231 | Pickup Post |
| 22 | V-7312 | Turntable Shaft Assembly |
| 23 | V-8121 | Pickup Arm Rest |
| 24 | | Fulcrum Mounting Screw |
| 25 | | Lockwasher |
| 26 | | Flatwasher |
| 27 | V-8027 | Speed Control Knob |
| 28 | V-7083 | "C" Washer |
| 29 | V-7084 | Control Knob |
| 30 | V-7083 | "C" Washer |
| 31 | V-7250 | Control Shaft Bearing |
| 32 | V-5018 | Escutcheon |
| 33 | V-8030 | Speed Control Bearing |
| 34 | V-8028 | Escutcheon |
| 35 | V-7286 | Ejector Link |
| 36 | V-7308 | Trigger Assembly |
| 37 | V-7307 | Spring Trigger |
| 38 | V-7290 | Screw - Sub-Frame |
| 39 | | Lockwasher |
| 40 | V-8117 | Base Plate Assembly |
| 41 | V-7287 | Ejector Adjustment Screw #6-32 x 1/2 |
| 42 | V-7276 | Index Spring |
| 43 | | "C" Washer-Idler Wheel |
| 44 | V-7283 | Ejector Arm |
| 45 | V-7977 | Idler Wheel |
| 46 | | Fiber Washer |
| 47 | V-8122 | Motor Mounting Grommet |
| 48 | | Idler Wheel Tension Spring |
| 49 | V-8011 | Motor Assembly - 110 Volts, 60 Cycles (Including Idler Wheel) |
| | V-8012 | Motor Assembly - 110 Volts, 50 Cycles (Including Idler Wheel) |
| 50 | | "C" Washer (Motor Mounting) |
| 51 | | Bearing Mounting Screw |
| 52 | V-8137 | Sub-Frame Assembly - Including |
| | | Set Screws |
| | | Sub-Frame Bushing |
| | | Ballbearing |
| | | Follower Guide (53) |
| | | Sub-Frame (52) |
| | | Turntable Shaft Assembly |
| | | Worm Gear (54) |
| 53 | V-7293 | Follower Guide |
| 54 | V-7315 | Worm Gear |
| 55 | V-7281 | Ejector Adjustment Screw 6-32 x 3/4 |
| | V-7280 | Ejector Adjustment Nut 6-32 |
| 56 | V-8129 | Ratchet and Rod Assembly |
| 56A | | Trip Rod Bearing |
| 57 | V-8125 | Trip Rod Spring |
| 58 | V-7289 | Trip Link Spring |
| 59 | V-7278 | Fulcrum |
| 60 | V-8130 | Trip Link |
| 60A | | Trip Link Bearing |
| 61 | V-8031 | Pal Nut, Speed Control Shaft Bearing |
| 62 | V-8128 | Crank and Pawl Assembly |
| 63 | V-7272 | Clamp Screw |
| 64 | | Ratchet Pawl and Arm Assembly |
| 65 | V-7996 | Pawl Spring |
| 66 | V-7235 | Index Slide Assembly - Consists of: |
| | | Lock Nut (69) |
| | | Slide Return Spring (67) |
| | | Index Slide (70) |
| | | Slide Bracket (66) |
| | | Slide Index Screw (68) |
| 66 | V-7275 | Slide Bracket |
| 67 | V-7269 | Slide Return Spring |
| 68 | V-7267 | Slide Index Screw |
| 69 | V-7268 | Slide Index Nut 10-32 |
| 70 | V-7270 | Index Slide |
| 71 | V-7296 | Switch Assembly - Consists of: |
| | | Rivet |
| | | Switch |
| | | Switch-Cover |
| | | Switch Bracket (71) |
| | | Switch Cam Spring (72) |
| 71 | V-7297 | Switch Bracket |
| 72 | V-7256 | Switch Cam Spring |
| 73 | V-7257 | Control Bearing Nut |
| 74 | V-8126 | Trip Crank Assembly |
| 75 | V-7274 | Pickup Crank Spring |
| 76 | V-7258 | Control Cam Assembly |
| 77 | | Cotter Pin |
| 78 | V-8123 | Control Link |
| 79 | V-7259 | Control Rod Spring |
| 80 | V-8029 | Shaft and Link Assembly (Includes Speed Control Shaft and Arm (80), Link (85) ) |
| 81 | V-7261 | Follower Arm Spring |
| 82 | V-7262 | Follower Arm Assembly |
| 83 | V-7292 | Follower |
| 84 | | Clip |
| 85 | | Speed Control Link |

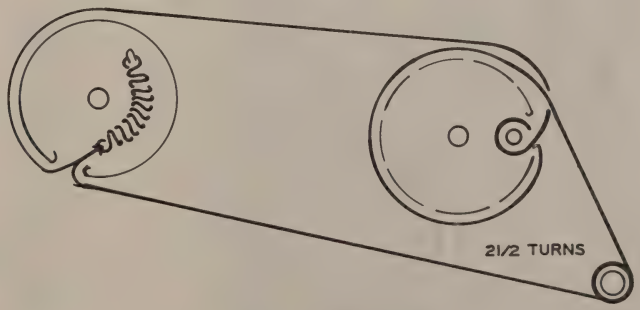
ZENITH
MODEL H723Z (Ch. 7H04Z)




ZENITH
MODEL H723Z (Ch. 7H04Z)

| | | | |
|---|---|---|---|
| TRADE NAME | Zenith, Model H723Z (Ch. 7H04Z) | | |
| MANUFACTURER | Zenith Radio Corp., 6001 Dickens Ave., Chicago, Illinois | | |
| TYPE SET | AC-DC Operated AM-FM Superheterodyne Receiver with Loop Antenna | | |
| TUBES (SEVEN) | Types 6BJ6 or 12BA6 RF Amp., 12AT7 or 12AU7 Converter, 12BA6 1st. IF Amp., 12BA6 FM 2nd. IF Amp., 12AU6 Limiter, 19T8 DET-AVC-AF, 35C5 Power Output. | | |
| POWER SUPPLY | 110-120 Volts AC-DC | RATING | .31Amp. @ 117 Volts AC |
| TUNING RANGE—BROADCAST | 540-1620KC | FREQ. MOD. | 88-108MC |

TUNING GANG FULLY CLOSED




DIAL CORD DRIVE

HOWARD W. SAMS & CO., INC. • Indianapolis 1, Indiana

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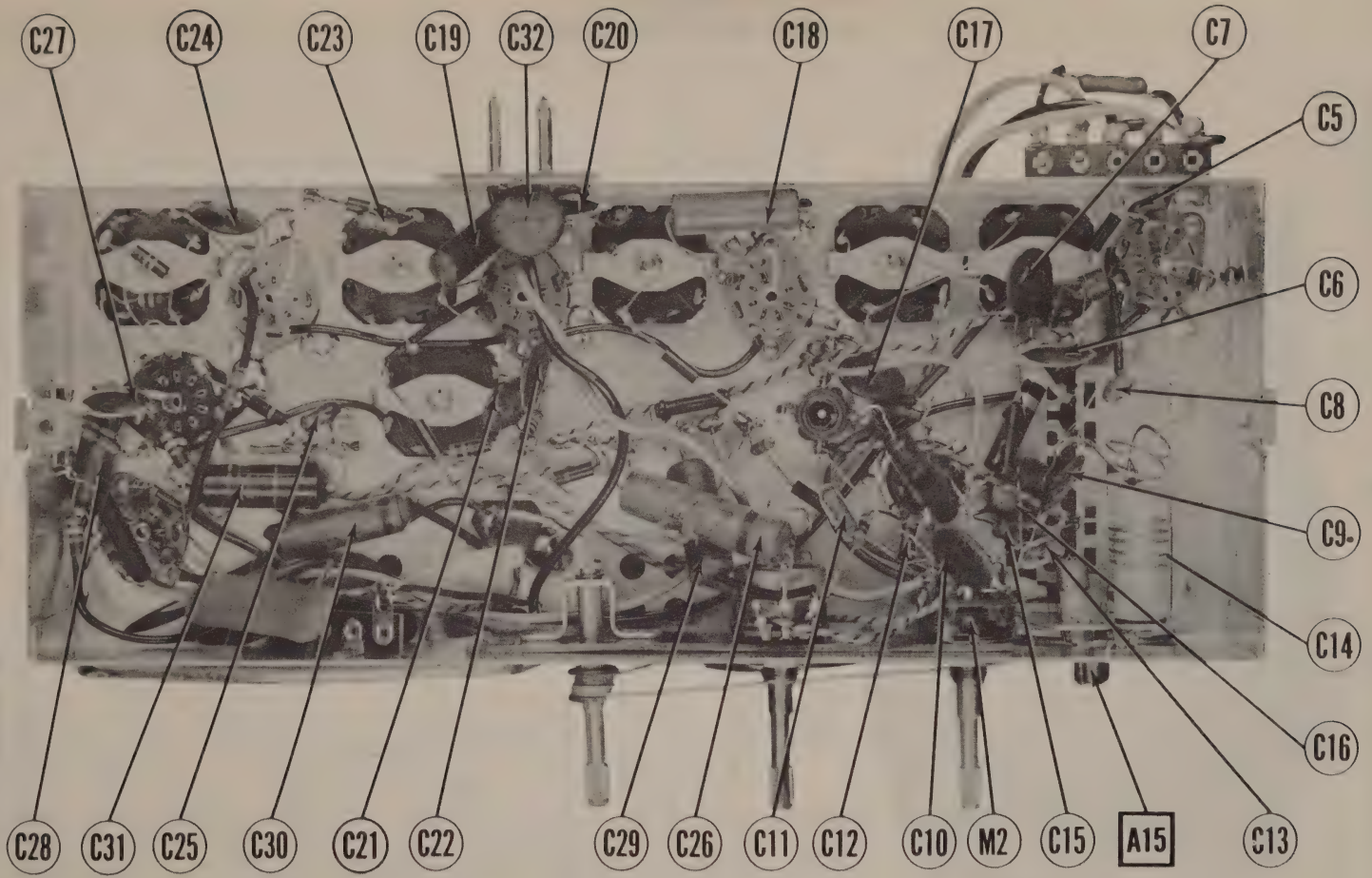
C27
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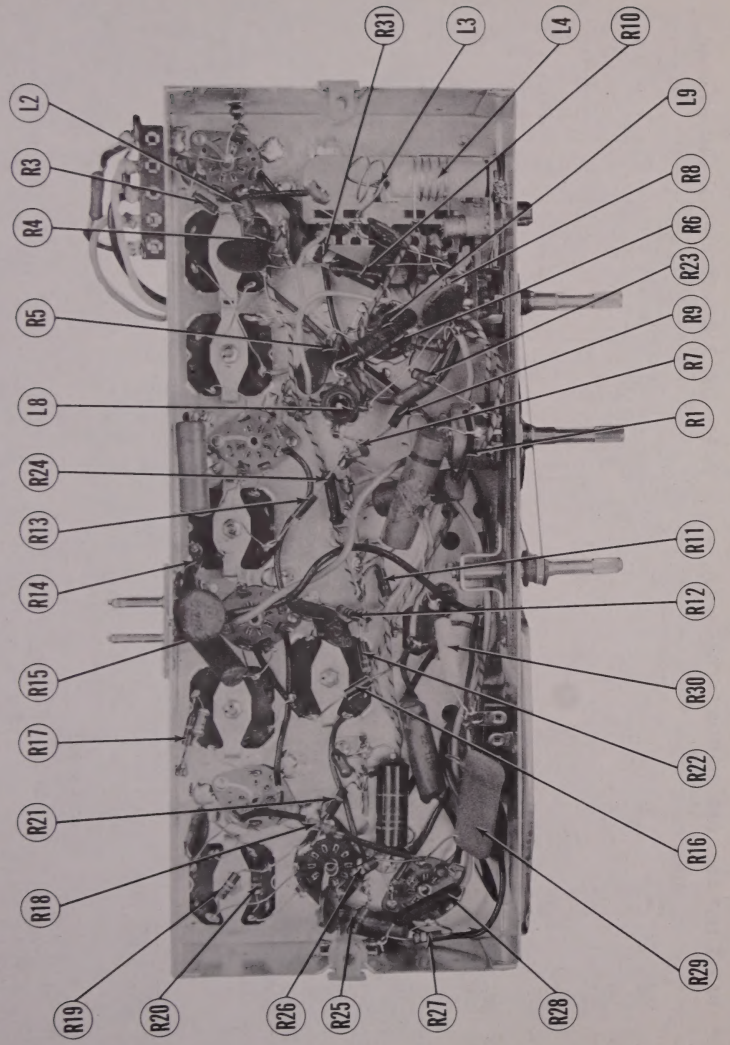


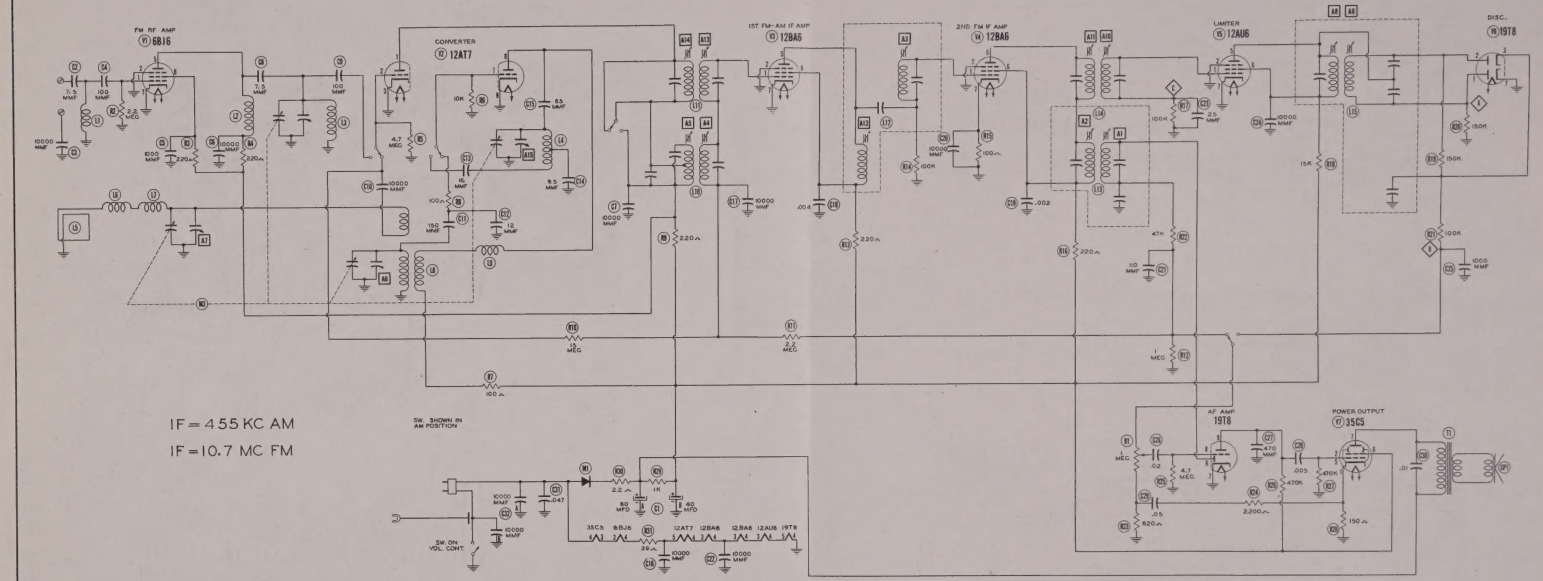


VOLTAGE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6BJ6 | -.3VDC | 0V | 85VAC | 76VAC | 75VDC | 75VDC | 0V | | |
| V 2 | 12AT7 | 75VDC | F-.7VDC A-3.5VDC | 0V | 57VAC | 76VAC | 75VDC | F1-7VDC A1-8.3VDC | 0V | 63VAC |
| V 3 | 12BA6 | -.5VDC | 0V | 57VAC | 65VAC | 75VDC | 75VDC | 0V | | |
| V 4 | 12BA6 | 0V | 0V | 65VAC | 32VAC | 75VDC | 75VDC | 17VDC | | |
| V 5 | 12AU6 | -.7VDC | 0V | 85VAC | 30VAC | 61VDC | 62VDC | 0V | | |
| V 6 | 19T8 | -.5VDC | -.5VDC | F1-1VDC A-.4VDC | 0V | 30VAC | -.5VDC | 0V | -.7VDC | 60VDC |
| V 7 | 35C5 | 5VDC | 0V | 85VAC | 82VAC | 0V | 80VDC | 235VDC | | |

† TAKEN WITH VACUUM TUBE VOLTMETER

RESISTANCE READINGS

| Item | Tube | Pin 1 | Pin 2 | Pin 3 | Pin 4 | Pin 5 | Pin 6 | Pin 7 | Pin 8 | Pin 9 |
|---|---|---|---|---|---|---|---|---|---|---|
| V 1 | 6BJ6 | 2.3Meg | 0Ω | 106Ω | 100Ω | 11.5KΩ | 11.5KΩ | 0Ω | | |
| V 2 | 12AT7 | 11.5KΩ 12.1Meg | 14.1Meg 43.7Meg | 0Ω | 95Ω | 80Ω | 11.5KΩ | 10KΩ | 0Ω | 55Ω |
| V 3 | 12BA6 | 12.1Meg | 2.7Meg | 0Ω | 56Ω | 66Ω | 11.5KΩ | 11.5KΩ | 0Ω | |
| V 4 | 12BA6 | 100KΩ | 0Ω | 69Ω | 30Ω | 11.5KΩ | 11.5KΩ | 10KΩ | | |
| V 5 | 12AU6 | 100KΩ | 0Ω | 95Ω | 18Ω | 10KΩ | 10KΩ | 0Ω | | |
| V 6 | 19T8 | 1 Meg | 150KΩ ±150KΩ | 150KΩ ±100KΩ | 0Ω | 18Ω | 1 Meg ±100KΩ | 0Ω | 6.7Meg | 147MΩ |
| V 7 | 35C5 | 190Ω | 470Ω | 19Ω | 145Ω | 470Ω | 19Ω | 19800 | | |

† TAKEN IN FM POSITION
‡ TAKEN IN AM POSITION
† MEASURED FROM OUTPUT OF M1

THE COOPERATION OF THE MANUFACTURER OF THIS RECEIVER MAKES IT POSSIBLE TO BRING YOU THIS SERVICE

1. DC Voltage measurements are at 20,000 ohms per volt; AC Voltages measured at 1,000 ohms per volt.
2. Socket connections are shown as bottom views.
3. Measured values are from socket pin to common negative.
4. Line voltage maintained at 117 volts for voltage readings.
5. Nominal tolerance on component values makes possible a variation of ± 10% in voltage and resistance readings.
6. Volume control at maximum, no signal applied for voltage measurements.

A PHOTOFACT STANDARD NOTATION SCHEMATIC

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## ALIGNMENT INSTRUCTIONS—READ CAREFULLY BEFORE ATTEMPTING ALIGNMENT

Use isolation transformer if available. If not, connect a .1MFD capacitor in series with low side of signal generator and chassis.
To set pointer turn tuning gang fully closed and set pointer to the dot at the low frequency end of the dial scale.

### AM ALIGNMENT

Loop should be maintained in same relative position to chassis as when receiver is in cabinet.
Volume control should be at maximum position. Output of signal generator should be no higher than necessary to obtain an output reading. Use an insulated alignment screwdriver for adjusting.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | BAND SWITCH POS. | RADIO DIAL SETTING | OUTPUT METER | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 1. | .05MFD | High side to pin 2 (Grid) of 12AT7 (V2) Low side to chassis | 455KC (400^Mod.) | BC (CCW) | Tuning gang fully closed. | Across voice coil. | A1, A2, A3, A4, A5 | Adjust for maximum output. |
| 2. | | Loop | 1620KC | " | Tuning gang fully open. | " | A6 | Fashion loop of several turns of wire and radiate signal into loop of receiver. Adjust for maximum output. |
| 3. | | Loop | 1400KC | " | Tune for max. output. | " | A7 | " |

### FM IF ALIGNMENT USING AM SIGNAL GENERATOR AND VTVM

| | | | | | | | | |
|---|---|---|---|---|---|---|---|---|
| 4. | .05MFD | High side to pin 1 (Grid) of 12AU6 (V5) Low side to chassis | 10.7MC (unmod.) | FM (CW) | Tuning gang fully open. | DC probe to point ④ Common to chassis. | A8 | Adjust for maximum deflection. |
| 5. | " | " | " | " | " | DC probe to point ⑤ Common to chassis. | A9 | Adjust for zero reading. A positive and negative reading will be obtained on either side of the correct setting. |
| 6. | " | High side to pin 2 (Grid) of 12AT7 (V2) Low side to chassis | " | " | " | DC probe to point ⑥ Common to chassis. | A10, A11, A12, A13, A14 | Adjust for maximum deflection. |

### FM IF ALIGNMENT USING FM SIGNAL GENERATOR AND OSCILLOSCOPE

Use frequency modulated signal with 60% modulation and 450KC sweep. Use 120v sawtooth voltage in scope for horizontal deflection.

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | BAND SWITCH POS. | RADIO DIAL SETTING | SCOPE CONNECT | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 4. | .05MFD | High side to pin 1 (Grid) of 12BA6 (V3) Low side to chassis | 10.7MC (450KC SWP) | FM (CW) | Point of non-interference. | Vert. Amp. to point ④ Low side to chassis. | A10, A11 A12 | Adjust for maximum amplitude and symmetry as per fig. 1 |
| 5. | " | High side to pin 2 (Grid) of 12AT7 (V2) Low side to chassis | " | " | " | " | A13, A14 | " |
| 6. | " | " | " | " | " | Vert. Amp. to point ⑤ Low side to chassis. | A9, A8 | Adjust A9 so 10.7MC occurs at center of crossover lines as per fig. 2. Adjust A8 for maximum amplitude and straightness of crossover lines |

### FM RF ALIGNMENT

| | DUMMY ANTENNA | SIGNAL GENERATOR COUPLING | SIGNAL GENERATOR FREQUENCY | BAND SWITCH POS. | RADIO DIAL SETTING | CONNECT VTVM | ADJUST | REMARKS |
|---|---|---|---|---|---|---|---|---|
| 7. | 300Ω carbon resistor | High side thru 300Ω to FM ant. terminal "F" Low side to "G" | 108.5MC (unmod.) | FM | Tuning gang fully open. | DC probe to point ⑥ Common to chassis. | A15 | Adjust for maximum deflection |
| 8. | " | " | 98MC | " | Tune for max. deflection. | " | A16 | " |

FIG. 1

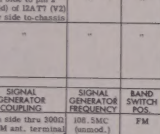
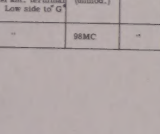


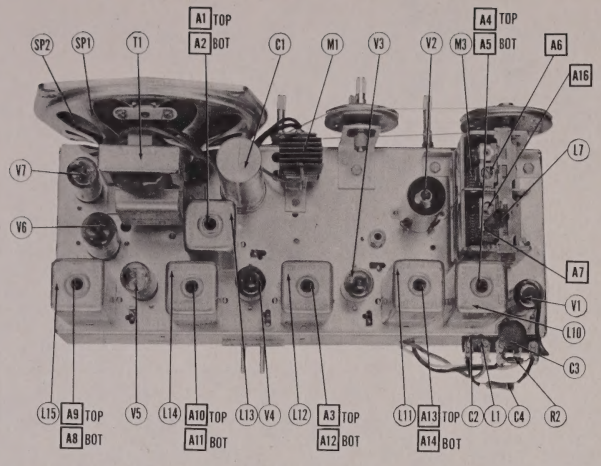

FIG. 2




# PARTS LIST AND DESCRIPTIONS
## TUBES (SYLVANIA or Equivalent)

| ITEM No. | USE | REPLACEMENT DATA ZENITH PART No. | STANDARD REPLACEMENT | RMA BASE TYPE | INSTALLATION NOTES |
|---|---|---|---|---|---|
| V1A | FM RF Amplifier | 6BJ6 | 6BJ6 | 7CM | |
| B | FM RF Amplifier | 12AU6 | 12AU7 | 9A | |
| V2A | FM Converter | 12AT7 | 12AT7 | 9A | |
| B | Converter | 12AU7 | 12AU7 | 9A | |
| V3 | 1st. FM IF Amp. | 12BA6 | 12BA6 | 7BK | |
| V4 | 2nd. FM IF Amp. | 12BA6 | 12BA6 | 7BK | |
| V5 | Limiter | 12AU6 | 12AU6 | 9A | |
| V6 | FM Det./1st AF Amp. | 12AT7 | 12AT7 | 9A | |
| V7 | Power Output | 35C5 | 35C5 | 6AD | |

# CHASSIS—TOP VIEW




# PARTS LIST AND DESCRIPTIONS
## CAPACITORS

Capacity values given in the rating column are in mfd. for Electrolytic and Paper Capacitors, and in mmfd. for Mica and Ceramic Capacitors.

| ITEM No. | RATING CAP. | RATING VOLT | REPLACEMENT DATA ZENITH PART No. | ALLIED PART No. | CORNELL-DUBILIER PART No. | ERIE PART No. | SPRAGUE PART No. | IDENTIFICATION CODES INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|
| C1A | 80 | 150 | 22-1757 | AF388D | | UFER4815 | TVL-2448 | ■ Filter |
| B | 40 | 150 | | | | | | ▲ Filter |
| C2 | 7.5 | | 22-1852 | 538 3N90 | TCC-E.8 | 59TQ1 | NPO8-8.2 | ● Cathode Bypass |
| C3 | 10000 | | 22-1869 | 538 3P10 | DD-103 | PTE4SE1 | 821-01 | Ant. Isolation |
| C4 | 100 | | 22-1869 | SI100 | D6-101 | GP1E-100 | 19C1 | RF Coupling |
| C5 | 1000 | | 22-1870 | SI102 | D6-102 | GP1E-102 | 19C1 | RF Amp. Plate Dec. |
| C6 | 10000 | | 22-1 | BYPD-01 | DD-103 | PTE4SE1 | 821-01 | RF Amp. Plate Dec. |
| C7 | 10000 | | 22-3 | BYPD-01 | DD-103 | PTE4SE1 | 821-01 | RF Bypass |
| C8 | 7.5 | | 22-1852 | 538 3N90 | TCC-E.8 | 59TQ1 | NPO8-8.2 | RF Coupling |
| C9 | 100 | | 22-1869 | SI100 | D6-100 | GP1E-100 | 19C1 | RF Coupling |
| C10 | 10000 | | 22-1 | BYPD-01 | DD-103 | PTE4SE1 | 821-01 | RF Coupling |
| C11 | 150 | | 22-1871 | SI150 | D6-150 | GP1E-150 | 19C02 | DC Feed Choke |
| C12 | 15 | | 22-2278 | SI150 | D6-101 | SW5T15 | 19C02 | Fixed Trimmer |
| C13 | 18 | | 22-2237 | SI15 | TCH-15 | | 18C8 | Osc. Grid Cap. |
| C14 | 85 | | 22-2238 | | | | | Fixed Trimmer |
| C15 | 85 | | 22-2238 | | | | | Osc. Feedback |
| C16 | 10000 | | 22-3 | BYPD-01 | DD-103 | PTE4SE1 | 821-01 | Conv. Fil. Bypass |
| C17 | 10000 | | 22-3 | BYPD-01 | DD-103 | PTE4SE1 | 821-01 | AVC Bypass |
| C18 | .004 | 600 | 22-448 | P488-004 | D6-402 | P7ER3D4 | GP2M-004 | 1st. IF Decoupling |
| C19 | .002 | 600 | 22-2220 | P488-002 | D6-202 | P7ER3D2 | GP2M-002 | 2nd. IF Decoupling |
| C20 | 10000 | | 22-3 | BYPD-01 | DD-103 | PTE4SE1 | 821-01 | 2nd. IF Cathode |
| C21 | 100 | | 22-5 | SI100 | D6-101 | SW5T1 | GP1E-100 | Diode RF Filter |
| C22 | 10000 | | 22-3 | BYPD-01 | DD-103 | PTE4SE1 | 821-01 | Diode RF Filter |
| C23 | 10000 | | 22-2307 | SI103 | D6-103 | SW5Q25 | GP1E-15 | Limiter Grid Filter |
| C24 | 10000 | | 22-3 | BYPD-01 | DD-103 | PTE4SE1 | 821-01 | Limiter Decoupling |
| C25 | 1000 | | 22-2239 | SI102 | D6-102 | SW5T2 | GP1E-102 | Limiter Bypass |
| C26 | 470 | 600 | 22-2240 | P488-032 | DF-303 | PTE4SE2 | 821-01 | Audio Coupling |
| C27 | 470 | | 22-5 | SI470 | D6-471 | SW5T5 | GP3K-470 | AF Amp. Plate |
| C28 | .005 | 600 | 22-2235 | P488-005 | D6-502 | P7ER3D5 | 61U-065 | AF Amp. Plate |
| C29 | 100 | 500 | 22-1158 | P288-01 | DF-303 | PTE4SE5 | | Tone Comp. |
| C30 | .01 | 400 | 22-1126 | P488-01 | DF-303 | PTE4SE1 | 821-01 | Output Plate |
| C31 | .047 | 400 | 22-1127 | P488-047 | DF-303 | PTE4SE1 | 821-01 | Output Plate |
| C32A | 10000 | | 22-1 | BYPD-01 | DD-103 | PTE4SE1 | 821-01 | Line Filter |
| B | 10000 | | 22-3276 | BYPD-01 | DD-103 | PTE4SE1 | 821-01 | Line Filter |

Note Some models use Parallel Resistors in this application to obtain desired value.

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# CONTROLS

| ITEM No. | RATING RESISTANCE | RATING WATTS | REPLACEMENT DATA ZENITH PART No. | IRC PART No. | CLAROSTAT PART No. | CENTRALAB PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|
| R1 | 1Meg | ½ | 63-2143 | | | 5B-324-3 | Volume Control and SW |

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# PARTS LIST AND DESCRIPTIONS (Continued)
## RESISTORS

| ITEM No. | RATING RESISTANCE | RATING WATTS | REPLACEMENT DATA ZENITH PART No. | IRC PART No. | IDENTIFICATION CODES |
|---|---|---|---|---|---|
| R2 | 2.2Meg | | 63-3268 | BTS-2.2Meg | FM RF Amp. Grid |
| R3 | 220Ω | | 63-3158 | | FM RF Amp. Screen |
| R4 | 100KΩ | | 63-3259 | | FM RF Amp. Grid Decoupling |
| R5 | 4.7Meg | | 63-1940 | BTS-4.7Meg | Conv. Grid - See Note |
| R6 | 100Ω | | 63-1854 | BTS-10K | Osc. Grid Suppressor |
| R7 | 100KΩ | | 63-1744 | | Parasitic Suppressor |
| R8 | 100Ω | | 63-1744 | | Decoupling |
| R9 | 220Ω | | 63-1758 | BTS-220 | AVC Network |
| R10 | 2.2Meg | | 63-3268 | BTS-2.2Meg | AVC Network |
| R11 | 2.2Meg | | 63-3268 | BTS-2.2Meg | AVC Network |
| R12 | 1Meg | | 63-3182 | BTS-1Meg | AVC Network Decoupling |
| R13 | 100KΩ | | 63-1744 | BTS-100K | 1st. FM IF Amp. Grid |
| R14 | 100KΩ | | 63-1744 | BTS-100K | 2nd. FM IF Amp. Grid |
| R15 | 300KΩ | | 63-3870 | BTS-300K | 2nd. FM IF Amp. Decoupling |
| R16 | 100Ω | | 63-1744 | BTS-100 | Limiter Grid |
| R17 | 100KΩ | | 63-1744 | BTS-100K | Limiter Decoupling |
| R18 | 150KΩ | | 63-3835 | BTS-150K | Limiter Load |
| R19 | 150KΩ | | 63-3876 | BTS-150K | Disc. Diode Load |
| R20 | 150KΩ | | 63-3876 | BTS-150K | De-emphasis |
| R21 | 470KΩ | | 63-3891 | BTS-470K | De-emphasis |
| R22 | 820Ω | | 63-1762 | BTS-820 | Tone Compensation |
| R23 | 820Ω | | 63-1762 | BTS-820 | Tone Compensation |
| R24 | 4.7Meg | | 63-1940 | BTS-4.7Meg | AVC Decoupling - See Note |
| R25 | 4.7Meg | | 63-1940 | BTS-4.7Meg | AF Amp. Plate |
| R26 | 470KΩ | | 63-1898 | BTS-470K | AF Amp. Plate |
| R27 | 470KΩ | | 63-1898 | BTS-470K | Output Cathode - Wire Wound |
| R28 | 150Ω | | 63-686 | BW-1-150 | Filter - Wire Wound |
| R29 | 2000Ω | 3 | 63-1527 | | Filter - Wire Wound |
| R30 | 1KΩ | 1 | 63-1525 | | Filament Dropping - Wire Wound |
| R31 | 39Ω | 1 | 63-2424 | BW-1-39 | Filament Dropping - Wire Wound |

# PARTS LIST AND DESCRIPTIONS (Continued)
## COILS (RF-IF)

| ITEM No. | USE | DC RES. PRI. | DC RES. SEC. | REPLACEMENT DATA ZENITH PART No. | MESSNER PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|---|---|
| L6 | Ant. Coupling Coil | 1.1Ω | | S-17856 | | | |
| L7 | Ant. Choke | 2.3Ω | | S-17855 | | | |
| L8 | FM Osc. Coil | 2.5Ω | 8Ω | S-17854 | | | |
| L9 | RF Choke | 8.2Ω | | 26-333 | | | |
| L10 | 1st. FM IF | 16Ω | 16Ω | 95-1150 | | CL-1 | Coupling Coil 3.6Ω 10 Microhenries Primary Tapped at 5.5Ω |
| L11 | 2nd. FM IF | 16Ω | 16Ω | 95-1150 | | | |
| L12A | 2nd. AM-FM IF | 29Ω | | 95-1251 | | | AM Section Part of L12B |
| B | 2nd. AM-FM IF | 29Ω | | 95-1251 | | | FM Section Part of L12A |
| L13 | 1st. AM IF | 1.7Ω | 25Ω | 95-1252 | | | |
| L14 | 3rd. FM IF | .5Ω | .5Ω | 95-1150 | | | |
| L15 | Disc. Trans. | .4Ω | .5Ω | 95-1253 | | | |

## SELENIUM RECTIFIER

| ITEM No. | RATING CURRENT | REPLACEMENT DATA ZENITH PART No. | SYLVANIA PART No. | SELETRON PART No. | NOTES |
|---|---|---|---|---|---|
| M1 | .07MA | 212-7 | NC-5 | SM1 | |

## MISCELLANEOUS

| ITEM No. | PART NAME | ZENITH PART No. | NOTES |
|---|---|---|---|
| M2 | Switch | 85-501 | |
| M3 | 3 Gang Var. Cap. | 23-2295 | AM-FM (14-453 MMF, 12-202MMF) |
| A15 | FM Antenna | 23-2253 | FM Osc. Adj. |
| | Dial Pointer | 54-2323 | |
| | Cabinet | 14-2272 | |
| | Knob | 45-869 | Band Switch |
| | Knob | 45-899 | Tuning |
| | Knob | 45-900 | Volume |

## TRANSFORMER (AUDIO OUTPUT)

| ITEM No. | IMPEDANCE PRI. | IMPEDANCE SEC. | RATING DC. RES. PRI. | RATING DC. RES. SEC. | REPLACEMENT DATA ZENITH PART No. | STANCOR PART No. | MERIT PART No. | CHICAGO PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|---|---|---|
| T1 | 3.5Ω | 3.5Ω | 260Ω | .5Ω | 206C2689 | A-3332 ① | A-3919 ① | R0-2 ① | ① Bend mounting tabs down flat out slots and mount on original bracket. |

## SPEAKER

| ITEM No. | RATINGS FIELD | | | REPLACEMENT DATA JENSEN PART No. | QUAM PART No. | INSTALLATION NOTES |
|---|---|---|---|---|---|---|
| | FIELD | V. C. IMP. | | | | |
| SP1 | PM | 3.5Ω | 49-869 | 52S74 | 52A1 | |
| SP2 | CONCEALED | 3.5Ω | | | | |
| | 9"/16" | 5 1/8" | | | | |

## COILS (RF-IF)

| ITEM No. | USE | DC RES. PRI. | DC RES. SEC. | REPLACEMENT DATA ZENITH PART No. | MESSNER PART No. | IRC PART No. | NOTES |
|---|---|---|---|---|---|---|---|
| L1 | FM Ant. Coil | 0Ω | | 20-358 | | | |
| L2 | RF Choke | 0Ω | | 20-335 | | | |
| L3 | FM Osc. Coil | 0Ω | | 20-333 | | | |
| L4 | FM Osc. Coil | 0Ω | | 20-328 | | | |
| L5 | Loop Ant. | 1.3Ω | | S-17868 | | | |